Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 31 **April, 1948** **No. 4**

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Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1948

Entered at the Post Office in Minneapolis as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
493 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

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Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

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Classified advertising—ten cents a word; minimum charge, $2.00. Remittance should accompany order.

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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 31 **April, 1948** **No. 4**

RECTALGIA ASSOCIATED WITH INTESTINAL DISEASES

Symptomatic Treatment

J. ARNOLD BARGEN, M.D.
Rochester, Minnesota

AMONG the most trying conditions encountered in the management of intestinal disease is the anal discomfort which so frequently occurs as a major complaint. This discomfort is trying not only for the patient but for the physician as well. Frequently the anal condition so overshadows the basic problem that much effort is wasted and valuable time is lost by directing all attention to the local anal discomfort instead of to the more serious and important disease in more proximal segments of the bowel.

However, experience has taught physicians that it is unwise to direct all the attention to the care of the intestinal disease, for the patient's comfort inevitably assumes an important place in the efforts to control a severe infectious intestinal disease or even the unpleasant sensations associated with the irritable bowel syndrome. Both may be associated with very uncomfortable anal tenesmus or other forms of rectalgia. Once the anal discomfort is controlled, or at least ameliorated, the major problem may be attacked more leisurely or at least with greater confidence from the standpoint of both the patient and the physician.

One may actually be surprised to see a severe diarrhea subside or lessen with the control of a patient's anal disorder, albeit this may have little direct bearing on the treatment of the disease causing the diarrhea. It is rarely wise to indulge in any reparative anal surgical procedure in the presence of intestinal disease but the importance of establishing anal comfort sometimes by the most simple means cannot be overrated. The need for control of anal discomfort has often assumed such major proportions that many symptomatic measures have been invoked including hot Sitz baths, anal irrigations and a variety of local medicaments. It has long been known that ethyl aminobenzoate (benzocaine) has a particularly soothing effect when applied to the anal region of these sufferers. The problem of the method of its application, however, has not been easy. When prepared in the form of a rectal suppository, it can be readily inserted by the patient himself. A suppository containing a soothing mixture of benzocaine, oxyquinole sulfate, balsam of Peru and ephedrine hydrochloride in cocoa butter has proved suitable.*

Three groups of patients with as many types of symptoms have been particularly helped by this type of suppository: those patients with the anal tenesmus and rectalgia associated with the irritable bowel syndromes, those with the misery of severe anal infection and those with the diarrhea of infectious intestinal disease. In a group of patients who were afflicted with chronic ulcerative colitis and who had rather severe diarrhea, decrease in the number of stools occurred in at least half the cases after use of this type of suppository. Table I illustrates this change in a small group of patients. Similar results have been obtained in a much larger series of cases.

The following is a report of a series of cases in which is illustrated the nature of the problem for which anal relief was obtained. (The case numbers follow consecutively those in Table I.)

From the Division of Medicine, Mayo Clinic, Rochester, Minnesota.

*Material used in this study was rectal medicone, supplied by The Medicone Company, 225 Varick Street, New York City, New York.

TABLE I. EFFECT OF RECTAL SUPPOSITORIES ON RECTAL DISCOMFORT IN CHRONIC ULCERATIVE COLITIS WITH RATHER SEVERE DIARRHEA

Case	Suppositories Used, Days	Decrease in Stools in 24 Hours	Rectal Discomfort
1	9	7 to 3	Relieved
2	9	6 to 2	Pain and soreness relieved
3	15	13 to 9	Slight soreness relieved
4	8	8 to 4	Slight soreness. No improvement.
5	8	5 to 3	Relieved

Report of Cases

Case 6.—A woman, twenty-five years old, who had had chronic ulcerative colitis for three years with a rectal stricture which had reduced the lumen to about 5 mm., inserted one of the suppositories into her rectum three or four times a day. The patient obtained relief from the burning after stools and then ceased passing two or three small, loose stools after each main stool. She thought the suppositories relaxed the rectum and thus made her more comfortable.

Case 7.—A girl, fourteen years old, had had chronic ulcerative colitis involving the entire colon for two years. The roentgenogram showed more involvement of the mucosa than of the deeper structures of the wall. The disease was not very active but there was tenesmus for an hour after each bowel movement. This discomfort was completely relieved after several insertions of suppositories.

Case 8.—A woman, thirty-six years of age, who, for two years, had had chronic ulcerative colitis which involved the rectum and sigmoid and which was associated with much rectal tenesmus, inserted the suppositories into her rectum. Relief of the discomfort caused by the tenesmus followed promptly.

Case 9.—A man, forty-six years of age, had had chronic ulcerative colitis for six months. The disease involved the rectum and sigmoid severely, with minimal changes in the entire colon. He complained of rectal burning after bowel movement, which was relieved by the suppositories.

Case 10.—A man, thirty-four years of age, who had had chronic ulcerative colitis for ten years, came to the clinic with far-advanced disease, a rectal stricture having reduced the lumen to about 1 cm., and with a fistula in ano. He had a very tender and sore anus. Much of this soreness was relieved by the use of the benzocaine suppositories.

Case 11.—A man, thirty-one years old, who had had regional enteritis for six years, came to the clinic with a history of having had a hemorrhoidectomy in 1932, an operation for a fistula in ano in 1937, a right hemicolectomy and resection of the ileum for regional enteritis in 1941, an operation for two fistulas of the rectum in 1942 and an operation for a fistula of the rectum in 1946. Examination showed an inflammatory process of the rectum which extended as far as the proctoscope could be introduced. There was stricturing of the rectum which had reduced the lumen to 1.5 cm. at a point 6 cm. from the anus. There was a subacute abscess and a draining sinus in the perineum. Roentgenologic studies revealed, at the site of anastomosis, recurrent enteritis associated with an inflammatory process in the colon. The patient's anorectal discomfort was almost unbearable. He obtained great relief by insertion of a suppository after each bowel movement.

Case 12.—A man, forty-six years old, who had had a severe diarrhea for seven years, came to the clinic for examination. A segmental colitis of the ascending and transverse colon was found and a proctoscopic examination revealed anal ulceration. The bowel seemed to be normal between the anus and midpart of the transverse colon. The anus was tender and painful. The patient became comfortable after using the suppositories for six days, one after each bowel movement, of which he had five daily.

Case 13.—A woman, forty years of age, came with the complaints of an irritable colon with which she had been troubled for six years. Her discomfort had been aggravated by a hemorrhoidectomy. She complained of a pressure sensation in the rectum which had been getting gradually worse. Insertion of the suppositories into the rectum after bowel movements resulted in complete relief of this symptom.

Any relief from medication of this type is purely symptomatic. However, it becomes much easier for the physician to control the other more serious lesion after the patient's suffering from anal discomfort has been wholly or partly relieved.

There may be other substances the use of which will result in similar relief. In this study, ethyl aminobenzoate (benzocaine) in a suitable formula in the form of a suppository has been of striking help in allaying anal discomfort. It is likely that patients with other painful anal conditions might be benefited by the use of such a suppository.

PROCTOLOGY AND THE GENERAL PRACTITIONER

WILLIAM C. BERNSTEIN, M.D.
Saint Paul, Minnesota

UPON my return to civilian practice after three years in the armed services, I was struck by the fact that a great many general practitioners were fearful that the present trends in medicine would limit the field of usefulness and activity of the general practitioner. I feel that I have been on the scene long enough now to evaluate and to attempt to clarify the situation insofar as the specialty of proctology is concerned.

Although proctology is one of the newer and younger specialties, it is already apparent that as knowledge and experience are accumulated, the field of activity of both the general practitioner and the specialist is rapidly widening. We are aware that a very large percentage of patients have symptoms referable to the lower gastrointestinal tract; since approximately 4 per cent of adults harbor precancerous adenomata or polyps in their rectum and colon, and since approximately 15 per cent of all cancer occurs in the rectum and colon, it is apparent that herein lies a very fertile field for action on the part of both general practitioner and proctologist. We need but take an active and sincere interest in patients with symptoms referable to the lower gastrointestinal tract and we will find that our field of usefulness will be greatly increased.

I believe that it is well to survey the situation as it exists today. Every large city and many small ones have advertising doctors who prey upon persons afflicted with anal, rectal and colonic complaints. These irregulars enjoy very large and lucrative practices despite the fact that their work is very mediocre or, in fact, very poor. Why, then, do the patients continue to patronize them? To my mind it is apparent that so many physicians are content or feel inclined to dispose of their rectal patients with nothing but a very cursery examination and a prescription for one of the many over-advertised suppositories or ointments, that the patients shop around until they find a doctor who makes an outward appearance at least of real interest in rectal or bowel disorders.

If we were to limit this discussion to the subject of constipation alone, we would be dealing with a condition that probably afflicts more people than all other diseases put together. The proceeds from the sale of laxatives and cathartics in this country are greater than those from cosmetics and far in excess of the proceeds from the sale of any other medicine. Still, we as a profession are doing very little about it. The study of all constipated persons who come to us for help would uncover many pathologic conditions, including cancer, and the application of intelligent treatment would improve the health and minds of many of these patients who are spending their lives in relative invalidism. It is in this direction that many of us should bend our efforts in the future.

Certainly it is to the general practitioner or family doctor that most patients go with their early symptoms. The general practitioner is in the very best position, therefore, to provide early and effective service in preventive medicine, cancer detection and treatment of early lesions. His field of usefulness need be limited only by his knowledge and experience.

The family physician is also the one on whom most families depend for advice and counsel when a member of the family learns that he has a cancer of the bowel and will need a radical operation with or without the establishment of a colostomy. Upon the moral support of the family physician depends the entire future mental comfort of the patient. Most physicians have had experience in the care of patients with colostomies and know that an intelligent patient need not be handicapped to any great extent by an artificial anus. The family physician should be the one to inform the patient and his relatives that the average patient with a colostomy usually becomes adjusted to his new life in a short period of time and learns how to take care of himself without the use of bags, diaphragms, plugs or other appliances. Once a patient learns from his own medical counsellor that, with a colostomy, his bowel can be trained to empty once or twice a day and remain clean the rest of the day, he is in a much better frame of mind to accept his new lot. It is indeed unfortunate when the family physi-

Read at the annual meeting of the Southern Minnesota Medical Association, New Ulm, Minnesota, September 8, 1947.

cian informs the patient that a colostomy is a rather horrible substitute for a normal anus and that it should be avoided at all costs. Needless to say, no conscientious surgeon would advise the establishment of a permanent artificial anus if he did not feel that it was an absolute necessity in ridding the body of a malignant growth. Patients with artificial openings, either colostomies or ileostomies, require more or less constant medical supervision. They can be handled well by the general practitioner who manifests an interest in their problems.

Most patients who are operated upon for cancer of the rectum and colon have had symptoms for more than ten months. They have been treated with suppositories and internal medications and have had hemorrhoidectomies and other rectal operations. We know, of course, that it would be much better for these patients if a thorough and adequate workup were to be done early rather than late in the course of their disease. Proctoscopic and sigmoidoscopic examinations should be available for all patients who present themselves with early symptoms referable to the lower gastrointestinal tract. No longer is the digital rectal examination considered an adequate rectal investigation. Only by means of a well-conducted proctosigmoidoscopic examination of the rectum and lower sigmoid regions can early lesions of these parts be ruled in or out. There are many general practitioners who are now doing excellent proctosigmoidoscopic examinations. The technique is not too difficult to master, but inasmuch as there are some tragic hazards connected with the procedure, one should become thoroughly familiar with the technique before subjecting the patient to this examination. Once one becomes familiar with the appearance of the normal rectum and sigmoid colon, a new world of pathology unfolds itself. One can learn to recognize such lesions as early neoplasms, ulcerative colitis, multiple polyposis, amebic dysentery, bacillary dysentery, lymphopathea venerea and numerous other bowel conditions.

The use of the x-ray in examinations of the lower gastrointestinal tract is well recognized by all physicians. I feel, however, that there are two points in this connection which should be emphasized. The first is that the barium enema examination should be used much more frequently and earlier in the course of the patient's illness than is generally practiced today, and the second is that the interpretation of a barium enema examination requires much training and experience. I feel that too many persons entirely unprepared to make this interpretation are attempting to examine these patients and are missing many early lesions. The fluoroscopic phase of a colon examination, in particular, should be performed by a well-trained roentgenologist. If a patient receives a negative report of his barium enema examination when, in fact, he has an early lesion in his colon, he may well have lost his one and only chance for early and complete cure of his cancer.

The diagnosis of the common anorectal conditions, such as hemorrhoids, fissures, abscesses and fistulas, is not difficult. These diseases are usually accompanied by either pain, bleeding, discharge or some type of protrusion or swelling. Every patient should be given the benefit of a well-taken history and thorough examination. The practice of having a patient bend over and "spread his cheeks," as was practiced in so many of the army and navy examinations, can no longer be condoned. I am happy to say that, in many centers, this type of examination has been replaced by adequate anoscopic and proctosigmoidoscopic visualization of the parts. In the group of conditions just mentioned, the general practitioner should be able to diagnose and treat all but the difficult or complicated ones.

I wish to mention specifically one disease, to make clear the point that there is much room for greater activity in the field of proctology. One of the most common complaints that is presented to either the general practitioner or proctologist is itching about the anus. In my own practice, one out of every four patients has pruritus as one of his chief complaints. The average physician seems to be afflicted with the same feeling of despair that most patients have concerning this condition. I do not share this feeling. Although the etiologic factors concerned in pruritus ani are numerous, it is possible after a well-taken history and examination to learn much about the cause in many patients. Personal hygiene, perianal infection (anal fissures, infected anal crypts, hemorrhoids, fistulas, et cetera), fungus infections, allergic reactions and psychic disturbances all play important roles in this disease. Once the cause is determined and the treatment applied, the patient may obtain gratifying relief. Only in a relatively small percentage of cases is it necessary to use

(Continued on Page 368)

DIVERTICULITIS OF THE COLON

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DIVERTICULA may arise along the entire length of the gastrointestinal tract and may be classified as either true or acquired diverticula. The so-called true or congenital diverticulum contains all the intestinal layers in their normal relationships. Meckel's diverticulum of the ileum is an example of this type. My discussion today is concerned with acquired diverticula. In this type of diverticulum the sac of mucosa has herniated through the wall of the intestine, and the muscular layers cover only a portion of the diverticulum and are relatively thick near the base of the pouch but sparse over the apex. Generally, the mouth of the sac which opens into the lumen of the intestine is small in relation to the remainder of the sac. The occurrence of one or more than one sac in the large intestine often is spoken of as diverticulosis. When these sacs are involved in an inflammatory process the diagnosis of diverticulitis is made.

Etiology

Many theories have been devised to explain the manner in which diverticula appear in later life. The most commonly mentioned of these is concerned with herniation of intestinal mucosa near the points of entry and exit of the blood vessels and lymphatics along the mesenteric border of the bowel. Contradictory to this theory is the fact that these saclike outpouchings also occur along the antimesenteric border and the lateral walls of the colon. It has been proposed that other factors, such as increased intracolonic pressure, the process of atrophy in the musculature of the aging intestinal wall and localized changes in the resisting power of the wall, may account for the formation of diverticula in any part of the colon. Henderson has suggested that diverticula appear during or after an attack of inflammation in a section of the colon and it is this initial inflammatory attack, or series of attacks, which constitute a mechanism that brings about weakening of the wall. As a result of his personal observations at operation and in roentgenograms, Erdmann considered that these diverticula are of congenital origin though some may be acquired. Fansler stated that diverticula appear more frequently along the antimesenteric border, and that as a consequence of degenerative changes muscular weakness develops. Trauma caused by hard stools and gaseous distention eventually produces herniation of mucosa through the weakened portion of the intestine and a diverticular sac is thus formed.

Incidence

It is generally agreed that diverticulosis occurs with advancing age. Bargen has found that diverticulosis rarely occurs before the age of thirty-five years and it is estimated that about 95 per cent of the patients are fifty years of age or older. It is frequently stated that obese individuals are more likely to have diverticulosis of the colon than thin persons. The sex incidence varies from equal distribution among males and females, to a preponderance of 4:1 in males, in Erdmann's experience. Young and Young in 1944 compiled statistics from the literature and found diverticulosis in 5.2 per cent of 70,572 colons examined at necropsy or roentgenographically.

Diverticula may appear anywhere in the various segments of the colon. They may be present diffusely along the entire length of the bowel or may occur singly or with gradations between these extremes. They are uncommon in the rectum and are most frequent in the sigmoid and descending colon. Dixon, Deuterman and Weber found that 60 per cent of all diverticula of the gastrointestinal tract are in the sigmoid.

Pathology

Diverticula communicate with the lumen of the intestine and are capable of filling and emptying. When a hardened mass of fecal material occludes the narrow neck of the sac, edema of the mucosa with obstruction to emptying occurs. With retention of the contents and consequent irritation of the mucosa, inflammation occurs and the process of diverticulitis is at hand. From this stage there are several possibilities as to the future course. The inflammation may subside and

From the Division of Medicine, Mayo Clinic, Rochester, Minnesota.
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the episode is then over. Should this not occur, one of several conditions may develop.

Bacterial peritonitis may develop from extension without perforation of the inflamed diverticulum. However, this is rare. The inflamed sac may rupture and produce acute peritonitis. The inflammation may spread to involve the intestinal wall and other diverticula and thus produce the condition known as "peridiverticulitis," with narrowing of the lumen of the intestine and eventual obstruction after repeated attacks. A localized abscess may occur as a consequence of the inflamed diverticulum's perforation. Fistulas between the inflamed region and the bladder, the vagina, the abdominal wall or other intestinal segments may develop. Arnheim has collected statistics from cases reported in the literature and has found some significant figures which follow.

Perforation with formation of abscess occurred in 19 per cent and peritonitis in 12 per cent of 834 collected cases. Formation of fistulas occurred in 8 per cent of 1,516 cases; the sigmoidovesical fistula was relatively frequent and more common in diverticulitis than in carcinoma of the sigmoid. Peridiverticulitis with narrowing of the lumen of the intestine and tumefaction occurred in 20 per cent of 1,049 cases. Metastatic suppuration as a complication of diverticulitis is rare and Arnheim found only three cases reported in the literature. Abscesses were reported in the liver, lung, brain and mesenteric, splenic and portal veins in these cases. It is the consensus that carcinoma bears no etiologic relationship to diverticulitis, though the two conditions may coexist.

Rarely do diverticula occur singly in the cecum and ascending colon. When inflammation occurs in such a solitary diverticulum, the process in the right portion of the colon resembles acute appendicitis clinically. At operation it sometimes is mistaken for perforating carcinoma. Its infrequent occurrence is attested by the fact that Carroll in 1943 found only forty-three cases reported in the literature. Abscess with or without perforation was common in the solitary diverticulum, and widespread peritonitis was rare in these cases. When classification into true or acquired diverticula was attempted, he found that the diverticulum in most cases was of the true type, with the normal layers of the colon in normal relationships in the pouch or sac.

That diverticulosis must exist before diverticulitis develops is generally agreed on. However, the incidence of diverticulitis in cases of diverticulosis is not definitely known. Many figures are given in the literature. According to Dixon, Deuterman and Weber, it is generally accepted that in about a fifth of the cases of diverticulosis diverticulitis will develop.

Diagnosis

Since the course of diverticulitis may run the gamut from a single attack of acute diverticulitis through the various situations just described to formation of a fistula, it is readily apparent that the symptoms, and physical and laboratory findings may vary immensely.

When uncomplicated diverticulosis exists, complaints vary from none at all to constipation, diarrhea, cramps, irritability, abdominal pain and occasionally even bleeding per rectum. This variation is so great that the relationship of these complaints to roentgenologic finding of diverticulosis may be questioned. There are no positive physical findings which indicate uncomplicated diverticulosis.

During an attack acute diverticulitis resembles acute appendicitis except that the symptoms are referable to the left lower quadrant of the abdomen. Pain of an intermittent cramping type is the common symptom, and it is usually aggravated by cathartics. Defecation may temporarily relieve the pain. Vomiting may occur. There is tenderness and occasionally rigidity of the left lower quadrant to palpation. There may be fever. Leukocytosis of the order occurring in acute appendicitis may be present but its presence depends on the extent and severity of the attack.

When perforation has occurred, cramping lower abdominal pain usually is present and is associated with chills and fever. Urinary symptoms often are present and consist of dysuria and frequency. A mass may be palpable in the left lower part of the abdomen. Should the process progress, formation of a fistula into the bladder, vagina, other loops of bowel or the abdominal wall may occur. The passage of cloudy urine and gas at the end of urination through the urethra is diagnostic of perforation into the bladder with formation of a fistula. The formation of sigmoidovesical fistula is usually due to diverticulitis rather than to carcinoma. Of fifty cases of sigmoidovesical fistulas studied by Bar-

gen, in thirty-one the fistulas were due to diverticulitis and in nineteen to carcinoma.

In some cases in which repeated attacks of diverticulitis occur or the initial process continues over a long period, the bowel wall in the involved region becomes thickened. Patients with this condition have recurrent bouts of abdominal pain, fever of varying degree, and a change in bowel habits usually toward progressive constipation. A mass may be palpable in the involved region and ultimately obstructive symptoms develop if the condition persists long enough.

The incidence of rectal bleeding in cases of diverticulitis varies greatly according to several authors. It is variously given as 5 to 17 per cent, though Young and Young found blood in the stools in 26 per cent of their eighty-four cases of diverticulitis. No other cause for bleeding could be found in these cases. Rosser, Fansler and others have emphasized that bleeding may occur in association with diverticulitis, while Nash and Palmer stated that in their experience rarely if ever can bleeding be attributed to diverticulosis or diverticulitis.

Special examinations which aid in establishing the diagnosis include sigmoidoscopy and roentgenologic examination of the colon. Sigmoidoscopy may reveal sacculation of the sigmoid and the mouths of the diverticular sacs may be seen. Roentgenologic examination of the colon may manifest a number of findings indicative of the condition. Examination after a barium enema which demonstrates the presence of diverticular sacs is of obvious value. The presence of various roentgenologic signs including serration, narrowing of a long segment of sigmoid with no destruction of the mucosa and obstruction to retrograde flow indicate various stages of diverticulitis to the roentgenologist. Differentiation between diverticulitis and carcinoma of the sigmoid is most often first made by a competent roentgenologist.

Treatment

Treatment of diverticulitis consists principally of medical management; surgical procedures usually are reserved for the complications. When the diagnosis of diverticulosis is made, efforts are advanced to prevent the occurrence of inflammation in the diverticula and consist of institution of a bland, nonconstipating diet and administration of mineral oil. Regular intestinal habits should be cultivated.

The acute attack of simple diverticulitis is best managed by placing the patient at rest in bed. The colon is placed at near rest by providing a liquid diet for the first few days. Heat is of value and may be applied by means of diathermy and hot wet stupes to the abdomen. Rectal instillation of warm oil for retention will supply heat. One of the sulfonamides, such as phthalylsulfathiazole (sulfathaladine), should be administered. The patient should be carefully watched until signs of tenderness over the involved region, usually in the left lower quadrant of the abdomen, subside. After the acute phase has subsided, the program used for management of diverticulosis is resumed gradually.

When the process has progressed to the point of obstruction, the patient receives treatment directed at decompression of the obstructed intestine. Fluids are not given by mouth but are administered parenterally. Heat is applied to the abdomen. With the patient in the knee-chest position, rectal irrigations may be given carefully. Intestinal intubation and suction drainage of the intestine may be needed. When the symptoms of obstruction are controlled, management is as described for the attack of acute diverticulitis. When medical management fails to relieve the obstruction, surgical intervention and colostomy become necessary.

Likewise, when abscess perforates, surgical intervention is necessary, but only after the acute symtoms subside in the majority of cases. Here also preliminary colostomy seems the treatment of choice. As a general rule, it may be stated that the establishment of a colonic stoma indicates the need for later colonic resection of the involved region. Treatment along medical lines before establishment of a colonic stoma should be employed only until the acute symptoms abate and should not be prolonged. This treatment is generally the same as employed in the obstructive type of diverticulitis, with the exception that rectal irrigations should not be used.

Prognosis

After the diagnosis of diverticulosis is made, it seems that progression to diverticulitis might occur less frequently than it does, if proper management were instituted.

The prognosis in cases of uncomplicated diverticulitis is good. Brown[3] and Brown and Marcley,[4] reporting on 1,100 cases of diverticulosis, included data on 99 cases of diverticulitis in which surgical treatment was employed and on 227 cases in which treatment was medical. Sixty-three per cent of the patients treated medically obtained excellent results while the remaining 37 per cent obtained only fair or poor results. However, many patients in the latter group lived fairly comfortably. Of the surgically treated patients, 57 per cent had excellent results.

In Brown and Marcley's series adequate follow-up was available in 192 of a total of 700 cases of diverticulosis. Diverticulitis had occurred in one of 192 cases.

Thus it may be said that the prognosis in cases of diverticulosis is excellent. The prognosis in uncomplicated diverticulitis is good, but the outlook for those patients who have complications of diverticulitis may be serious.

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PROCTOLOGY AND THE GENERAL PRACTITIONER

(Continued from Page 364)

radical treatment in the form of alcohol injections or anal neurectomy. The conscientious general practitioner could well afford to spend much more time with these patients than he does at present. The promiscuous use of suppositories and proprietary ointments in pruritus ani should be condemned. Only an intelligent investigation of the individual patient, with properly applied treatment, can bring satisfaction to both patient and physician.

A word of caution might well be injected at this time. It is extremely easy to be carried away by one's enthusiasm or to become overly optimistic about certain forms of treatment after a few successes. In proctology there are certain procedures which can be done well as ambulatory or office procedures. Each case should be decided upon its own merits, and the physician should not be influenced too far by the patient's desires. The injection treatment of hemorrhoids is a good example. If this treatment is limited to the cases for which it is indicated, good results may be anticipated. If, however, the patient insists on having his hemorrhoids injected, simply because Dr. Brady has stated that the ambulant treatment of hemorrhoids is satisfactory or because some friend has had the injection treatment and liked it, the results will be far from good. The injection treatment of hemorrhoids was never intended to be an adequate treatment for all kinds of hemorrhoids. Similar statements can be made regarding the ambulant treatment of other rectal conditions.

The patient who has suffered from anorectal disease, be it a painful external hemorrhoid or a fistula of long standing, and has obtained relief is the most grateful patient one can find. If the general practitioner would only realize this fact, he would devote much more time and effort to the care of these patients. There need be no cause for alarm that the general practitioner's field of usefulness will be narrowed. In the limited field of proctology alone there is an almost unlimited opportunity for men in general practice to widen their scope of activity in making earlier diagnoses and in treating early lesions. In the long run, the general practitioner will not only better his own professional status but will take away the incentive and necessity for patients to patronize the advertisers and other cultists.

HEMOSTATIC AND ABSORBABLE DRESSINGS IN ANORECTAL SURGERY

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ANORECTAL surgery, of necessity, is carried out in a very vascular field. Any agent which will assist in the control of postoperative bleeding and oozing may well be added to the means at hand. In the past several years, absorbable hemostatic dressings have been placed on the market and have been used fairly extensively in many fields of surgery. Owing to the hemostatic properties and the size of the dressings, they are most adaptable to anorectal procedures. We have been using them for over a year with complete satisfaction and feel that they are worthy of consideration and use.

This report will be limited to a discussion of only one of these products, the one which we have used in some 200 cases of hemorrhoids, anal fissure, fistula, perineal resection and pilonidal disease. This product is a sterile, absorbable oxidized cellulose pad, sold under the name, Oxycel, and manufactured by Parke, Davis and Company. This material was first prepared by Kenyon and his associates,[9,10] in the Eastman Kodak Laboratories, and has been subjected to extensive laboratory investigation to determine possible irritating properties and rate of absorption from various animal tissues. Using a special technique devised for testing various absorbable materials, Frantz et al[3,7] found that implants in connective tissue, muscle, bone, serous and synovial cavities, brain, thyroid, liver, kidney and spleen were completely absorbed in varying lengths of time, depending on the amount of material introduced, extent of operative trauma and amount of blood present. Gruhzit et al[6] have observed the absorption rate of this dressing when implanted in various tissues. These investigators describe the disintegration and absorption in the following manner: "When implanted in tissue or when in contact with tissue fluids or blood, it forms coagulum. In this manner it produces local hemostasis. Following the initial hemostatic effect, it is quickly changed into a dark brown, soft mass, which in turn, becomes jelly-like colloidal material. Subsequently, the jelly-like mass becomes thin, forming a water like, pigmented fluid which either diffuses or is taken up by phagocytosis into the general tissue fluid circulation."

Frantz[4] states that following implantation of the dressing, no appreciable clot forms in the meshes of the gauze. According to Gruhzit,[6] the initial lesion formed at the site of the implantation consists of a multilocular nodule or cyst surrounded by a coagulated tissue membrane. As it becomes lysed and absorbed, the coagulum is surrounded by a zone of fibroblasts and invading large monocytes. Absorption is usually followed by some connective tissue scar formation. Frantz and Lattes[5] observed no acute inflammatory reactions following implantation of the dressing unless there was associated infection or some irritating foreign material present. The only untoward effect noted was when the dressing was implanted in bone. Burns[1] reported that oxidized gauze implanted in the omental bursa of the dog was completely absorbed in approximately twenty-eight days; while a piece the same size when placed among the intestines was completely absorbed in two days. In his opinion, absorption varies with the amount and type of peritoneal fluid present and the mechanical motility of the surrounding tissues.

The specific hemostatic property of oxidized cellulose seems to depend on formation of a coagulum consisting of salts of polyanhydroglucuronic acid and hemoglobin.[5] There is also quite a little swelling when it becomes moist with tissue fluids so that it adapts itself to wound spaces and acts as a packing agent by pressure.[6] These dressings are prepared from gauze by a special oxidation process with nitrogen dioxide which converts the unoxidized cellulose into polyanhydroglucuronic acid which is absorbable and hemostatic. The pad should be used immediately after the glass container is opened and removed with sterile forceps.

As brought out by Rosser,[8] the ideal postoperative anorectal dressing should have the following characteristics:

Read at the annual meeting of the Southern Minnesota Medical Association, New Ulm, Minnesota, September 8, 1947.

1. It should be a true dressing of individual wounds, not a pack or plug.
2. It should permit free drainage of secretions.
3. It should have a hemostatic effect without undue pressure.
4. It should permit the early escape of gas from the bowel.
5. It should be removable without pain.

I feel that the agent being discussed fulfills these criteria for postoperative anorectal wounds, and may be used in pilonidal and perineal wounds with success. It is not a substitute for suture or ligature and is of no use in active arterial bleeding. I like this dressing particularly well in cases of anal fissure, where a deep posterior incision is made with a plastic repair or marsupialization of the skin edges; by this I mean a broad triangular wound with the base outward, towards the coccyx, the skin edges being sutured down to the wound edges, not into the bottom of the incision. Bleeding is controlled by suture, and the dressing, as delivered from the container, is placed snugly in the open wound and through the anal canal. This is a pack of course and partly occludes the anal opening, but not sufficiently to prevent the escape of gas and even soft stool, as evidenced by the fact that many patients have bowel elimination while the pack remains in place. Over this hemostatic dressing in the wound is placed a piece of rubber dam, about 6 inches square, followed by gauze to give pressure, all of which is held in place by adhesive strips and a T binder. The external gauze, rubber dam and binder are removed eight to ten hours following operation and are not replaced. The cellulose pack soon becomes black and appears as a well-organized clot, becoming drier and more friable and smaller each day, some breaking off and being expelled. Owing to the friability, the pack cannot be removed intact. It usually has entirely disappeared in four or five days, during which time the wound has been held open and the edges apart, which is essential to the proper healing of this type of wound. After the pack has entirely disappeared, the wounds are dressed in the regular way, being kept apart and allowed to heal only from the bottom up. Previously used packs of gauze adhered to the wound, causing bleeding and pain when removed, and were most uncomfortable when in place. I feel sure that our fissure patients have been much more comfortable since we have been using these absorbable dressings.

If there are two fissures or ulcers in the anal canal, as is occasionally the case, requiring two incisions, I place the full dressing, as described, in the posterior incision and one half of a dressing in the other, which is usually anterior, followed by the rubber dam pack, et cetera.

With fistulas, the same technique is carried out after the wound has been properly saucerized, with all tracts dissected out and the bleeding controlled. The pack or packs are applied to fill the cavity. They remain in place until the outer dressings are removed or a Sitz bath is taken. Then they become loose and fall out, certainly with the first defacation, unless the wound is quite deep. At times, the packs may have to be removed piece by piece to allow proper healing. I have never noted any complaint when these packs have to be removed, as was the case when dry gauze was used. They are moist, shrunken, friable and do not adhere.

With hemorrhoids, we do a dissection type of procedure, involving four or five linear incisions. This cellulose dressing should be used against the anus, not in the anal canal, and should be covered with a rubber dam, some dry gauze, adhesive tape and binder, as mentioned above. The entire dressing, including the cellulose portion, should be removed in twenty-four hours unless disturbed by an undesired elimination. The cellulose does not adhere to the anal incisions and usually falls off when the outer dressings are removed. We have not had any postoperative bleeding from external hemorrhoidal incisions since using it. An alternative method which is sometimes used, is to cut the dressing into small strips, ½ inch wide and the length of the incision, and place one of these strips against each incision, the rubber dam being placed against these strips with the regular gauze dressing on top, all held in place by tape across the buttocks.

In office cases, where external thromboses are removed including all the vessels down to the sphincter, one small hemostatic strip is placed over the incision, covered with dry gauze and a snug binder.

In many cases of hemorrhoids there is also an accompanying stenosis which requires widening the anal canal by a deep posterior incision. If

this procedure is carried out, the wound resulting is similar to that of a fissure and is treated likewise.

In procedures for pruritus ani, where undercutting of the perianal skin is done through multiple linear incisions, this dressing is used as with hemorrhoids.

In pilonidal wounds, after the cyst has been removed, the base of the wound is packed with the cellulose dressing, which is placed so that overlapping of the skin edges is avoided. Over this, the usual gauze is applied, the wound being left open with the edges marsupialized. The entire pack is left in place until it falls out, or is removed when of no further use in the treatment. This new dressing has been particularly useful in these cases, as there is usually quite a little oozing which cannot be controlled by ligature.

In perineal resections, troublesome oozing is sometimes encountered about the prostate, vesicles and posterior vaginal wall. These packs have been applied directly to these areas, the wound closed, and healing has occurred without any infection.

It is evident that proper use of this new hemostatic dressing will change the usual methods of controlling anal bleeding by packs and pressure. In fact, some proctologists have abandoned the use of any internal dressing in simple anal cases to avoid pain and difficulty in expelling gas. These new dressings offer an almost painless and effective precautionary measure.

In conclusion, it may be said, while meticulous hemostasis is most important, this oxidized cellulose dressing is a valuable addition to present methods.

The dressing is nonirritating, but until in solution it constitutes a foreign body.

The product fulfills the requirements for an ideal postoperative dressing in anorectal cases.

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REPORT ON CANCER DETECTION CENTER

Of the 108 persons, fifty-nine men and forty-nine women, examined in the University of Minnesota's new Cancer Detection Center during the first four weeks of its operation, forty-nine were found to have abnormalities requiring medical attention, Dr. David State, director of the center, reported April 1.

Examinations conducted by University specialists in the detection clinic disclosed, according to Dr. State: one definite case of cancer, twelve suspicious tumors requiring further diagnosis, nineteen pre-cancerous lesions, twenty benign (non-malignant) tumors and thirty non-tumorous conditions such as high blood pressure requiring immediate medical attention.

A large percentage of the forty-nine persons who were referred to their personal physicians for treatment, were found to be suffering from two or even three different conditions requiring medical attention, Dr. State explained.

Detection center doctors found that fifty-nine of the 108 persons examined were in good health and required no treatment. These persons, however, were advised to return to the clinic for physical examinations every six months to keep themselves assured that they are free of cancerous or pre-cancerous conditions.

More than 3,500 applications have been received for admission to the center for examination, Dr. State reported. At the present rate at which the center is able to operate, it will require two years to examine all who have applied.

"If persons who have made appointments desire to be examined before they can be accommodated at the University's Cancer Detection Center," Dr. State advised, "they should visit their personal physicians for a thorough physical check-up."

A project of the University's medical school, the Cancer Detection Clinic is financed in part by the Minnesota state division of the American Cancer society, the National Cancer institute of the United States Public Health service and the University's malignant disease research fund.

The center is open to men and women of Minnesota in the age bracket in which cancer most frequently occurs, forty-five and over, who are without symptoms of cancer. The center is operated on an appointment basis, and examinations are conducted on Tuesdays for women and on Thursdays for men.

A $5.00 registration fee is charged each person who is examined, but if a patient is unable to pay, he is asked to pay as much of the fee as he can.

The Cancer Detection Center is located in a temporary barracks-type building on Church street just west of University Hospitals.

SEROLOGIC OBSERVATIONS IN THE TOXEMIAS OF PREGNANCY

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TWO years ago, before this Academy, in a paper entitled "Serology and Obstetrics," data were presented in support of the hypothesis that the true toxemias of pregnancy are diseases caused by cell substances from the products of conception that are toxic to the cells of the pregnant woman, if they can gain access to her blood. Adequate proof of this causation in each instance demands that one demonstrate in the fetus a cell substance, such as the A, B, Rh substance, et cetera, not possessed by the cells of the mother; and that one demonstrate that the severity of the manifestations of toxemia in the mother varies indirectly with the strength of a demonstrable specific antitoxin in the mother. The proof parallels the nature of proof of disease caused by some bacteria or snake venom.

I have been asked to report any further developments accruing from two more years of work on the subject.

The hypothesis seems to demand a change in our understanding of the significance of blood group composition and cell substance status of human blood. The findings suggest that the inherited agglutinogens and isoagglutinins are not mere static morphological characteristics allowing the differentiation of humans into four groups. They are parts of a larger functional toxin-antitoxin mechanism. The potentially toxic elements are represented by the cell substances such as the A, B, Rh, M, N, et cetera; and the isoagglutinins, inherited or actively generated, represent the agglutinative arms of specific antitoxins, the other arms of the antitoxins being the lytic arms and the opsonic arms. It has long been known that in autopsies, following death from the transfusion of incompatible blood, the cells of the donor are not only agglutinated, but hemolysed and phagocytized. The same linked phenomena have been demonstrated *in vitro*. The phenomena paralleled those long known to occur when certain bacteria are attacked by a specific anitoxin. Obstetrical findings would suggest that a kinship exists between these two sets of parallel phenomena: that they are not strange to each other, as heretofore taught, demanding that we explain blood hemolysis by the presence of inherited unassociated hemolysins, that, however, for some unknown reason, tend to parallel in strength the isoagglutinins, and demanding that we explain the stimulated phagocytosis by the presence of unassociated, so-called hemotropins, that, however, are group specific. The hemolysins, isoagglutinins and so-called hemotropins represent the arms of specific antitoxins as in bacteriology. From the obstetrical findings it would seem logical to assume that the blood group compositions existing in our infinitesimal segment of evolutionary time are the result of the acquired inheritance of complements of antitoxic substances specific against certain cell substances that are toxic to the cells of individuals not containing these cell substances. This inheritance favored survival where the products of conception, due to the bisexual mechanism of human reproduction and under genetic laws, chanced to contain cell substances toxic to that mother.

The right to associate the time-honored isoagglutinin with an antitoxin was immediately challenged. When you suggested that erythroblastosis in the child was likely due to a specific anti-A, anti-B or anti-Rh antitoxin, whose high titer could be proved by titering its agglutinative arm, you were told that this rise in isoagglutinin titer was merely a manifestation of an antibody reaction to the implicated agglutinogen from the child. The isoagglutinin could in no way be associated with an antitoxin, nor could an agglutinogen be associated with a toxin.

The question arose as to what further proof could be devised that would tend to show that we were really dealing with a toxin-antitoxin reaction and that the isoagglutinin represented but the agglutinative arm of a specific antitoxin. It suggested itself that if it were a maternal antitoxin that injured or killed the baby in erythroblastosis or allied injury, then, by analogy and prediction, one should be able to injure or kill a rattlesnake by administering rattlesnake antitoxin to the snake. Here the snake could be considered as an aggregation of cells, as are the products of conception, or an aggregation of specific bacteria, the cells containing the cell substances of their com-

Read before the Minnesota Academy of Medicine, Saint Paul, Minnesota, December 10, 1947.

mon ancester: in the first two instances, the fertilized ovum, and in the last instance, the original bacterium. In collaboration with Dr. W. J. Breckenridge, director of the Natural History Museum of the University of Minnesota, these experiments were consummated, and, as predicted, the vital cells of the snakes were injured histologically and the snakes succumbed. Whatever the value of this work, it is being continued in the reasoned hope that, by analogy, it may throw some light on the question whether such diseases as progressive muscular dystrophy, and many others, may be due to maternal antitoxin action suffered by the fetus during intra-uterine life: that though we may ostensibly save the erythroblastotic child by proper transfusion, basic injury may have been sustained which may manifest itself later in life.

Obstetric and serologic data in relationship to true pregnancy toxemia and erythroblastosis fetalis suggested the assumption that the natural or inherited isoagglutinins, arms of inherited antitoxic substances, had likely gradually become inheritable because their inheritance favored survival of both mother and child and obviously the species, and at the same time made possible the gradual breeding into the species of even toxic cell substances in the inscrutable interests of evolution. It seemed logical from an ontogenic analysis, in point of time of the appearance of the group cell substances in the fetus, in strength sufficient for demonstration, and the appearance of the inherited isoagglutinins, that it must take from eight to many more times longer for a specific antitoxin to become widely inheritable in a species than for the cell substance to become widely incorporated as inheritable. The group substances become demonstrable around the thirty-seventh day of gestation, according to Kemp (this is about the time that nausea usually begins, and that fact may be significant), and the isoagglutinin inheritance does not manifest itself until well after the birth of the child. It seemed from known data that the A substance was likely the first to enter the species, then the B substance, and it was reasoned that the substances comprising the Rh group, and likely many others, had entered the species at a date so late in evolutionary time that enough time has not yet elapsed for their specific antitoxins to become inheritable. This reasoning was similar to that followed by uniformitarianism in geology: in the serologic problem, that the serologic sculpture of the past could be explained by the natural forces, such as are evidenced in the active immunization against the Rh substance and the active increase of immunization against the A and B substances, still operating in the present.

This assumption was immediately challenged. It was said to smack too much of the ideas of Lamarck and Luther Burbank, a rationalization that was completely outmoded. There was no evidence that there was any natural force, environmental or otherwise, that could influence the genes. The A and B substances arose as mutations, and likewise the natural isoagglutinins must have arisen by mutation. Mutation has become a handy, fashionable, time-and-thought-saving hypothesis.

Again in collaboration with Dr. Breckenridge, an attempt was made to throw some light on this rationalization by serologic studies of two well-known snakes.

It is estimated that king snakes and rattlesnakes have lived in juxtaposition for possibly ten million years. That the king snake is today relatively immune to the bite of the rattler is known. It is not a wild assumption that had the king snake not developed a hereditary immunity he would not exist today in rattlesnake environment. The question suggested itself as to whether the invulnerability arose from the situation that a rattlesnake's cell substances might be similar to those of a king snake and thus harmless when injected through its venom. Venom is saliva, likely, from our findings, containing the basic cell substances of the snake, as the saliva of human secretors contains the group cell substances of the individual. Or was the invulnerability due to the king snake having evolved an inheritable antitoxin to the rattlesnake venom? In a measure it was a problem paralleling the bite of the placental villi of a fetus. If the cell substances of the fetus are similar to those of the mother, a true toxemia will not develop. If an O group mother engenders a group A child, by a group A husband, she has a relative immunity due to her complement of inherited anti-A antitoxin.

It was found that both rattlesnake red cells and king snake red cells were agglutinated by rattlesnake antivenom. This was interpreted as showing that both snakes had one or more cell substances in common. This parallels the finding that, in human blood, both group O, Rh positive

cells and group A, B, or AB, Rh positive cells are agglutinated by Rh antitoxins.

Using the same elements for comparison, it was found that the king snake serum agglutinated the red cells of the rattlesnake, but the rattlesnake serum did not agglutinate the red cells of the king snake: just as group O serum will agglutinate the red cells of groups A, B, and AB, but the serum of these three groups will not agglutinate the red cells of group O. Thus the king snake's relative invulnerability would seem to be due to an inherited antitoxin or antitoxins specific against the toxic cell substances in rattlesnake venom. The rattlesnake has not had to evolve antitoxins against the cell substances of the king snake because the king snake is not a venomous snake.

Now if one species can develop a hereditary antitoxin to the cell substances of a different species, it should not do violence to one's reasoning to allow that a hereditary antitoxin can be evolved by a group within a species, a group whose cells are susceptible to toxic cell substances of other groups within the species, especially considering the fetus-mother relationship throughout pregnancy.

If the inheritance of cell substances and specific antitoxic substances are dependent upon genes, and all evidence so indicates, then new inheritable substances and antitoxic substances must depend on a change in the genes. It is an opinion that when we call a new substance or feature a mutation, as the term is generally understood and used, we are ignoring forces that have long been operating from the immediate and possibly the connected environment. When the manifestations of the consequences of this change become perceptible to our senses, we call it a mutation. But it is a gradual evolution, most of which is not demonstrable. The presence of inherited specific antitoxins in human blood seems to me to give a clue to some of the forces that change genes. It is an opinion that an anti-A or an anti-B inheritable antitoxic substance would never have appeared in human blood had the genes from which they stem not been gradually influenced in some way either by the circulating A or B substances or by the gradual and desultory impact of actively generated antitoxins.

For the obstetrician, both in practice and theory, the advantages of an understanding of the fetal cell substances hypothesis of the causation of the true toxemias of pregnancy is of great everyday value. It seems to permit one, by analyzing the cell substance status of husband and wife, to predict more accurately whether or not she is likely or not likely to develop a true toxemia. Similar cell substances in husband and wife is the most auspicious setup. The cases warranting especial supervision are those in which the husband's cells contain a cell substance or cell substances not possessed by the wife. The adequate proof of a fetal cell substance toxemia permits one to render a more reasoned prognosis as to the possible safety of a future pregnancy. A group O, Rh positive woman, for example, may have an almost fatal toxemia with a group A Rh positive child and later have many pregnancies with group O children without a sign of toxemia. Furthermore, if she develops a high antitoxin titer or relative immunity in her first A cell substance toxemia and again becomes pregnant with an A group child before her antitoxin titer or relative immunity has much diminished in strength, she may show few or no signs of toxemia. This acquired high relative immunity likely accounts for the statistical finding that true toxemia is less frequent in multiparas than in primiparas. It furnishes a probable answer to the question of why a woman may show severe manifestations of toxemia when she begins to absorb a dead fetus or may almost completely absorb the products of conception without a subjective or objective sign of toxemia. Other things being equal, the difference depends upon whether the cell substances of the products of conception are toxic or nontoxic to the mother. To those of us who long believed from clinical findings that the absorption of autolyzing placental infarcts were the primary cause of true late toxemia, it suggests that the toxin-antitoxin battle at the front line, the placenta, is the cause of the distinctive infarcts. Their autolysis, at least theoretically and logically, should increase the toxemia by liberating large quantities of the involved toxic fetal cell substance or substances.

The main importance of this hypothesis lies in the clear direction that it gives to the development of specific antitoxins, to be used, in the interests of the mother, either after the intrapartum death of the child in an adequately proven true toxemia, or after the delivery of a live child, or in postpartum eclampsia. It is true that the more widespread and increased attention to prenatal care and to early and meticulous rational empiric

treatment has appreciably reduced the frequency of eclampsia and, in general, reduced the morbidity and mortality of pregnancy toxemia; yet the fact remains that, at times, the earliest and most meticulous application of the most rational treatment is unsuccessful and might logically be bettered if specific antitoxins were available for use in the type of cases under discussion.

Discussion

DR. L. W. BARRY, Saint Paul: This is quite a profound subject. I should like to ask a few questions. Have you used any antibodies in the treatment of these cases? Have you worked out the blood grouping and titer in all of these cases? What is the mechanism underlying the mutations which you mention? Is the production of the antibodies described a protective mechanism on the part of the mother or child, or both?

DR. E. F. ROBB, Minneapolis: Dr. La Vake has certainly given us something to think about this evening. Three years ago the Rh question seemed to be something rather simple, but as time has gone on, many more factors have been introduced into the subject, and I, personally, am very much confused about it. Perhaps Dr. La Vake is about twenty years ahead of us now. Also, it seems to me that there might be a possibility that the Rh factor may have a part in some of the poorly understood diseases that we see today, namely, nephrosis, leukemia, et cetera. Certainly, Dr. La Vake's paper has been most enjoyable.

DR. LA VAKE, in closing: In answer to Dr. Barry, it must be emphasized that we are discussing only cases considered to have been adequately proven. For example, an O group Rh positive woman with a group A Rh positive husband, begins to develop signs of toxemia; the expectant mother's anti-A and anti-B antitoxins are titered and it is found that the anti-B antitoxin titer remains stable while the anti-A titer begins to fluctuate or is above normal. In such cases, one can predict with a high degree of accuracy that the child belongs to group A. After delivery, the mother's anti-A antitoxin will tend to accumulate and its titer will rise. The faster and higher it rises, the more rapidly will the signs of toxemia in the mother recede. The titer will rise sometimes six or more dilutions. The pattern of recession of signs of toxemia parallels the pattern of recession of signs of injury observed after giving rattlesnake antitoxin to a subject of rattlesnake bite. This elevation of titer gradually subsides, but if it is still relatively high when this mother bears another group A child, the mother may manifest few or no signs of toxemia. This acquired relatively high immunity likely accounts for the statistical finding that toxemia is less frequent in multiparas than in primiparas.

At present, the practical importance of these investigations lies in their value in segregating cases most likely to develop toxemia and in prognosticating the safety of chancing future pregnancies. Their main importance would seem to lie in the clear and logical direction that they give to the possible development of specific antitoxins that may be used in the interests of the mother after the intrapartum death of the child in toxemia, or after the delivery of a live child, and especially in eclampsia. In 1926, McMahan reported, in a series of ten cases, a high percentage of improvement when treating toxemic patients with the sera of women who had just recovered from a toxemia. At that time no explanation could be given for the improvement, nor for the failures. Data now at hand would indicate that we are dealing with a toxin-antitoxin mechanism, and that to be helpful the serum must contain the antitoxin specific to the cell substance antigen involved.

In regard to pediatrics and Dr. Robb's discussion, it has long been held that one may use blood of any group in transfusing newborns because in the early months the hereditary isoagglutinins have either not yet appeared or are so weak that there is no fear of agglutination. This is true from the standpoint of the immediate danger of agglutination. However, if the findings under discussion have any directive significance, it would seem unwise, except in emergency, to give an O group infant either A, B or AB blood. This because of their possible, even subclinical, toxic effect. Where possible, blood of the infant's own group should be given. Many cases have been reported of disease reactions resulting even from the intramuscular injection of incompatible blood. Such reactions can be logically explained only if one accepts the hypothesis that such blood is potentially toxic to that individual.

Again, assuming that the fetal injury observed in erythroblastosis and allied conditions is the result of the action of maternal antitoxins during intra-uterine life, it would suggest that many early degenerative diseases, such as progressive muscular dystrophy, et cetera, may stem from the permanent underlying injury to fetal cells sustained during pregnancy. There is clinical evidence that not only can maternal antitoxins injure the fetus, but that, as fetal cell substances can injure maternal cells, so, at times, maternal cell substances may injure fetal cells.

INFLUENZAL MENINGITIS TREATED BETTER WITHOUT SPINAL PUNCTURE

Recovery from influenzal meningitis is more prompt and complications are fewer when treatment by spinal puncture is omitted, according to Archibald L. Hoyne, M.D., and Rowine Hayes Brown, M.D., in the February 28 issue of *The Journal of the AMA*.

Rare in adults, the influenzal meningitis was formerly almost universally fatal. The sulfonamide compounds, specific anti-influenzal serum and streptomycin have all made the picture more optimistic, but even today there is no standard accepted for their application. Many doctors still believe that numerous spinal taps for drainage are necessary even after diagnosis has been established by spinal tap. Furthermore, when the National Research Council released streptomycin for treatment it advised that the new antibiotic be injected by spinal puncture.

The authors' conclusion is based on a dozen years of experience in the treatment of meningitis. In their article they report specifically on fourteen consecutive patients with influenzal meningitis treated at the Cook County Hospital in 1946 and 1947 and sixteen consecutive patients treated at the Chicago Municipal Hospital in 1946. There was only one death in each group, and in both of the fatal cases the patients had been given streptomycin by spinal puncture as well as intramuscularly. On the other hand, twenty-three of the twenty-eight patients who recovered had received no treatment by spinal puncture after diagnosis. These twenty-three had been given streptomycin intramuscularly, had been treated with serum, or had received sulfonamide compounds—sometimes all three.

THREE MONTHS IN A STATE MENTAL HOSPITAL

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SENSATIONAL articles regarding the shortcomings of mental hospitals have been appearing here and there in various magazines during the past four or five years. Quite a number of them do not seem to me to be entirely unbiased, but rather to be attempts, by emphasizing defects and magnifying distressing situations, to produce an altogether unfavorable impression.

Undoubtedly, mental hospitals have been handicapped and hampered in various ways, especially during the war and in these postwar days of high prices and high wages. They have been overcrowded, and replacements of certain old and unsanitary buildings have been impossible. It has been difficult to secure reliable personnel including physicians, because of the failure of legislatures to provide increased salaries and wages and more attractive living accommodations to compete with the inducements for outside employment.

The public should be aroused to the crying needs of the hospitals, but not by misrepresentation of facts or unfair criticism of conscientious and capable public servants who are carrying on a most important work under very difficult circumstances. The ethics of such exaggerations, even for the purpose of improving conditions, are open to question.

We are fortunate in Duluth in being located near the new and well-equipped state hospital for mental diseases at Moose Lake, which was first ready for occupancy in 1938. The site was well chosen. It is on a large level tract of land, comprising several hundred acres, just south of Moose Lake and only a mile and a half from the village of Moose Lake. The hospital has had the advantage of careful planning in advance and is not the result of gradual growth.

The main building and the three-story brick cottages are attractive and dignified architecturally and are connected by sunny corridors above ground. The pleasant entrance, comfortably furnished lobby and attractive offices give the newcomer a pleasant first impression. The color schemes and the plants and pictures used in the interior decoration of the halls and corridors are restful to the eyes. Soothing and carefully selected music is often heard in the halls. Close by are a beauty shop for women patients, a barber shop for the men, occupational therapy rooms, a store, in fact, many of the facilities found in a small village.

I had been aware of all this from previous visits to Moose Lake, but in January, 1947, I decided to see for myself just what was going on in the wards and private rooms. I knew that the superintendent had had difficulty in securing sufficient physicians, so I applied for a position as an untrained assistant for a period of three months. I hoped during this time to add a little to my very limited knowledge of mental diseases.

When I began my work on January 17, the institution was not overcrowded. It has a capacity of 1,000 beds, and the daily census during my stay was usually under 980.

In the main building are two admission divisions, one for men and one for women. These are located on the second floor and have accommodations for about sixty-five patients in small wards and private rooms. There is also a sitting room, dining room, really adequate toilet facilities, and an office. The corridors have linoleum floors, and the wards and private rooms terrazo flooring. They are easily kept clean, and there was no pronounced or disagreeable hospital order. All rooms were usually well lighted, heated and ventilated.

Patients are admitted on court order or as voluntary patients. A large proportion come from St. Louis County, others from Pine, Carlton, Itasca and Koochiching counties.

Both voluntary and committed patients enter the same divisions and receive similar care.

If in need of special medical attention and nursing, new patients are at once transferred to the hospital divisions on the fourth floor. Otherwise, after being seen by a physician, they receive routine care until the physical and mental examinations are completed. During this period the patient remains at rest, usually in bed, in a small ward or private room under the supervision of the physician in charge of the division, and

Read before the medical staff of St. Mary's Hospital, Duluth, Minnesota, September 4, 1947.

in the immediate care of the nurses and attendants.

Included in the staff at present are two physicians in addition to the superintendent and the first assistant, both of whom are experienced psychiatrists. They make the mental examinations and mental diagnoses.

The number of cases requiring emergency care or needing close hospital supervision varies from day to day. Under ordinary circumstances there would not be more than about twenty. Daily charts with temperature records, laboratory tests, x-ray findings, record of treatments given, physicians' and nurses' notes are kept up for them just as in a good general hospital. Penicillin and sulfonamides are freely used; blood levels are determined; intravenous infusions and blood transfusions are used as indicated.

The family is kept informed as to the seriously ill patient's condition, and provision is made for relatives remaining with the patient.

The nursing is done under the supervision of graduate registered nurses assisted by student nurses from various well-known hospitals who are receiving their three months of training in the care of mental cases. The graduate nurses also have the help of competent men and women attendants, some of whom have had special training or experience in the army or navy. Many of them are young married people and have homes in Moose Lake or vicinity.

I saw very little evidence of unkindness or inconsiderate treatment on the part of attendants. Any bruise of any kind must be at once reported to the main office, to the attending physician and to the superintendent, and an immediate investigation is made. Any attendant found treating patients harshly is promptly discharged.

A large proportion of the hospital patients are old people suffering from senile mental deterioration. Many of them have incontinence of urine and feces. Practically no homes and few hospitals are equipped to give such patients adequate care. They have to be lifted frequently and the linen has to be changed if they are to be kept comfortable and free from bed sores. This cannot be accomplished readily unless strong male attendants are available. In a private home, even if three trained nurses are employed in twenty-four hours, this is not always easy or possible, but it is part of the routine care at the state hospital.

There is a profusion of clean linen, and the change is made as often as the patient becomes soiled.

The food is abundant, of excellent quality, and is served as hot as possible from electrically heated carts which come from the main kitchen. Special diets for diabetics and other patients requiring them are provided upon doctor's orders.

One of the physicians is on call at night.

Besides visiting his hospital bed patients, the assistant physician must make daily rounds in the cottages where ambulant patients sleep. In one of these cottages on the men's side of the institution are about 125 patients who, while in fairly good general physical condition and able to be up and about, are not improving mentally and whose prognosis is not good.

In another cottage are about the same number of men whose outlook is more hopeful. Most of them are employed in the institution in various capacities.

There are two similar buildings on the women's side.

In conference with the nurses and attendants in charge, the physicians see patients in need of first aid or other medical attention. Clinics are held several times each week, to which the ambulant patients are referred for special attention. On Monday, the physician acts as a chiropodist or pedicure and also treats minor ailments or injuries. On Tuesday, new patients are vaccinated, given Mantoux tests, and anti-typhoid injections. Blood is secured for the routine Wassermann test. An x-ray of the chest is taken. All these procedures are for the protection of the patients themselves as well as employes. On another day a gynecological clinic is held.

In the meantime, courses of lectures are given to the student nurses, and regular mental conferences are held at which they are present.

Quite a complete variety of mental disorders are encountered.

The classification used is one which was developed in state mental hospitals and is included in the *Standard Nomenclature of Disease*. Its main subdivision of psychoses are those due to infection, to intoxication, to trauma, to disturbance of circulation, to convulsive disorders, to disturbances of metabolism, to disturbances of growth, nutrition or endocrine function, and to new growths.

I was interested to learn that mania, dementia

precox and paranoia are not clearly defined diseases in themselves, and that they cannot be attributed to definite tangible causes or structural changes. They are conditions or mental states which may or may not be present in various mental diseases.

Besides the psychotics, there were always patients who were in the hospital because of psychoneuroses which had rendered them antisocial. Quite a number of the young men had psychopathic personalities and had been committed for various sexual offenses. Some had been in the army or navy. In ordinary conversation with them, they seemed rational and intelligent enough. Perhaps they should not be sent in such large numbers to a state mental hospital. They are not wanted in the reform schools or state prisons.

The more excited and destructive patients were in the second floor divisions in the main building. All the windows in all buildings were well screened to prevent accidents and escapes. The doors leading to each of the main divisions and the cottages were kept locked. I had keys to all the wards, and as my duties took me to all of the men's divisions, I at first entered them with some trepidation but soon found that little effort was made by most of the patients to escape or to become unmanageable.

There are few conspiracies or attempts at concerted action. The patient is usually so self-centered and concerned with his own troubles that he pays little attention to the plans or movements of others.

After a few days I realized I was just living in a rather normal community. My fellow citizens were going about their own business but often gave me a friendly greeting. Some of them seemed a little peculiar, but I had met unreasonable folks before in Duluth and elsewhere.

Normal community life has therapeutic value for these mental patients and is promoted for this reason.

Religious services, community singing, patients' dances, amateur theatricals, ball games, movies, entertainments by local talent, and others provided by the University, are all included in "social activities." Attendance is a prized privilege and an incentive to good behavior.

The almost normal social life possible for many patients is rarely mentioned in articles criticizing mental institutions. To take advantage of it, one must of course be a reasonably good citizen or individual, and it is the purpose of all the treatment to transform the antisocial person into one who can safely be returned to his home environment.

Few persons regain mental stability unless they actually want to. Large numbers have never had it. Inheritance and environment and lack of early training have conspired to prevent normal mental development. The late Clifford Beers,[1] founder of the National Mental Hygiene movement, while he decried the inadequacies of mental hospitals, both public and private, in which he suffered much before he returned to his senses, and wrote his book, recognized that reforms in the hospitals were not the whole answer to the problem. In his work he had the co-operation of many institutional superintendents, and first and foremost, of Adolph Meyer, the dean of American psychiatrists.

The goal in the treatment of the individual patient is to get him to understand himself and control his emotional and volitional faculties. When their situation is fully realized, some patients can be influenced to take the proper steps to remedy their shortcomings. This, I understand, is the purpose of psychoanalysis and other forms of psychotherapy.

Aggravated cases are incorrigibly egocentric. The catatonic schizophrenic is content to let the rest of the world go by. He will stand rigidly all day long in one position, ignoring passers-by and seemingly taking a smug satisfaction in being self-sufficient. He has withdrawn or has escaped into a dream world of his own. Sometimes he can be shaken out of his lethargy for a time by shock treatment, but relapses are frequent.

Occupational therapy had its orgin in mental hospitals. In its broader sense it includes many of the activities carried on there.

To keep a patient constantly interested and occupied, so that he will have practically no time for morbid thoughts, is often a real problem. One important daily activity is eating, and the serving of well-cooked, warm and appetizing meals is an essential form of occupational therapy.

Simple tasks assigned to the patient soon after admission create interest which is still further developed as the patient becomes capable of assuming responsibility.

The men at Moose Lake at first help to polish floors, then to serve meals in the ward. They

assist in dressing and in caring for helpless patients, doing this under supervision. Later they are promoted to the cottages and help in the bakery, the laundry, and the power house, in work on the grounds or on the farm.

Large groups go in the morning and afternoon to the men's occupational therapy shop and do woodwork and painting, making very attractive and salable toys. Women patients help to keep their rooms and wards clean and do other work under the direction of the nurses. If found to be dependable, they serve food in the wards and in the employes' and staff dining rooms. They hem linens, mend worn garments, sort clothes, work in the laundry or sewing rooms and in the occupational therapy shops, where they cut, sew, dye and weave rags into rugs, make dolls' and children's clothes, do embroidery and tatting, and knit.

In many cases, hand work gives an outlet for repressed energy. To many patients, it might well be said, "Your cure lies in your own hands." Some patients write letters, stories or poems. Reading is encouraged, and there are libraries well stocked with books and magazines for the fairly large number of patients who will benefit from their perusal. The *Lakeside News,* a weekly mimeographed sheet, is very popular.

Of course, there are depressed patients and others with delusions, whose interest, for the time being at least, cannot be aroused by work or reading or any other form of occupational therapy. Some of them are helped by shock therapy or the specific treatment of an underlying disease, syphilis for example. There are always a considerable number of deteriorated or senile patients who need only to be made as comfortable as possible.

The possible percentage of cures or of improvement in mental health cannot be secured if the patients are considered merely as groups. They must also be treated as individuals, each having their own mental trends and complexes. Nearly all are benefited to some extent by any special interest shown in them on the part of the staff and attendants.

Beside the psychosomatic treatment, which naturally has a large part to play in the care of patients in a mental hospital, there are certain physical and medical agents which are used to advantage.

Hydrotherapy was not employed to any considerable extent while I was at the hospital, perhaps partly on account of expense and lack of trained personnel, but also, I believe, because it is not as much in vogue as formerly.

Electric shock and insulin shock were given to a rather large number, especially to catatonics and other schizophrenics, but also to manic depressives, and those suffering from melancholia and other affective disorders. The treatment was prescribed and regulated by the superintendent but often administered by the assistant physician. I did not particularly enjoy giving electric shock. It is not pleasant to watch a patient having a severe convulsion. However, the apparatus used is almost foolproof, and to my knowledge there have been no fatalities at the hospital. Fortunately, the patient has no recollection of the experience, and in many cases there is apparent improvement. So far as I know, no one has explained satisfactorily what really happens and there is some question as to the ultimate results. Some patients receive at least two electrical shock treatments a week, for two or three months. Metrazol shock is rarely used, even when safeguarded by curare.

Another form of treatment, which at times causes the physician considerable anxiety but which seems to be quite effective in syphilis of the nervous system, is the production of increased bodily heat by malarial infection which is then controlled by quinine.

In ordinary medical practice, a report of a temperature rise to about 106° would be quite alarming to any physician. It was, therefore, something of a surprise to me to be expected to maintain a patient's temperature at that level for several hours a day for a number of days. Without hyperthermy the prognosis of paresis has always been grave. It is a little more hopeful now.

One might suppose that a state hospital would be a very noisy place. It usually is not. Of course, at times, certain disturbed patients do make quite a racket. But they are not always responsible for weird sounds; radios account for some of them. Self-centered patients are not disturbed too much by the noises others make. Usually if a patient is continually creating a disturbance, he is given a sedative. The doses used and apparently well borne are somewhat larger than those usually given in private practice. Morphine was used much less often than I had expected.

Generally, it was only the agitated patients, who

would exhaust themselves by excessive activity, who required much sedation.

Of course, restraint was also often necessary in such cases, both for the protection of the patient himself and others. The use of low beds, of wooden or metal guards beside the bed, of restraint by sheets or by leather fleece-lined cuffs applied to the wrist or ankle, and finally the dressing of the patient in jackets euphemistically called "camisoles," were measures available. The camisole is a canvas jacket, the sleeves of which are long and closed so that the patient's hands cannot be destructive. It could be applied carelessly and make the patient very uncomfortable. The nurse in charge of each floor is responsible for its proper adjustment.

Restraint of some sort is necessary in the case of any patient with delusions, even if he is not destructive or violent. Otherwise, he would wander about and get lost or come to harm.

The only alternative, and the one which I believe would have to be used if no restraint were permitted, would be to have a sufficient number of nurses and attendants so that the patient was constantly under surveillance.

History taking often threw some light on the reasons for the mental breakdown. We often got an inkling of the causes of the pitiable condition of many of the individuals we saw daily, from their previous records.

Some of the failures are due to inherited weaknesses, but many of them are the result of unfavorable environment and lack of training. This places a heavy responsibility on parents and all who are part of the world of growing children.

Meyer[2] has pointed out the folly of regarding the bodies of patients as somehow separate from their personalities, and not regarding the individual as a social unit.

The world needs as social units persons who have courage, who will face difficulties and run risks. This usually means that they have a moderate amount of good sense, science, philosophy, and/or religion.

They must not be preoccupied with themselves or think that they are the most important individuals in the universe. In other words, they must not take themselves too seriously.

They cannot afford to indulge in the unhealthy emotion of hatred. Other emotions and appetites, necessary and useful in their place, must be kept under reasonable control.

Children trained along these lines are likely to grow up to be normal social units that will harmonize with other social units so that group action may be effective and progressive whether the group be a medical society, a legislature, or a society of nations.

We therefore need more people who understand human nature and its aberrations. We need many more psychiatrists and physicians who use psychosomatic medicine, and we need places where they can be trained.

Mental disease can be studied in our state hospitals. There is a wealth of material there. They could become centers of research and study, adjuncts to the University, and places where generations of interns and postgraduate students could secure thorough and invaluable experience and instruction. Politics should have no place in them. The state can well afford to provide comfortable homes and adequate salaries for even the assistant physicians and their families in order to build up permanent staffs of high quality, who would be stimulated and encouraged to do good work by the presence of interested students. The wages of other employes should be adequate. Antiquated buildings in other state hospitals should be promptly replaced, and overcrowding should be eliminated.

We have, then, near at hand a medical center of which we should be proud and of which even now we could make more use. With some effort on the part of members of the medical profession and other good citizens, it should become one of the great teaching institutions of the Midwest.

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CLINICAL-PATHOLOGICAL CONFERENCE

A CURE FOR NEUROGENIC BLADDER

Case Study

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Dr. A. H. WELLS: I would like to wager that less than half of the audience know of a fairly recently devised and successful treatment for the paralytic bladder. Any prolonged delay in instituting this proper therapy frequently leads to irreversible changes not amenable to operation.

Case Study

DR. O. E. SARFF: The patient, a white man, aged thirty, was admitted to the hospital complaining of bilateral flank pain of a dull character. He had had a hematuria for two months associated with some burning, smarting and frequency of urination. He had lost 20 pounds in approximately the last four months. He also stated that as long as he could remember he had had a dripping of urine which kept his clothes continuously soiled. Between normal voidings there was a continual escape of urine. His past history revealed that he had been operated upon at the age of two weeks for spina-bifida. His mother died of tuberculosis.

The physical examination was negative with the exception of tenderness in the region of the navel and bilateral club feet. Laboratory studies of the urine revealed a specific gravity of 1.014, pH 7, albumen 4-plus and microscopically packed fields of red blood cells, pus cells and bacteria. The urine culture had Pseudomonas pyocyaneous and Streptococcus fecalis. The red and white blood cell counts were within normal limits. The blood urea and creatinine were average. An intravenous pyelogram revealed a bilateral hydronephrosis and bilateral hydro-ureter. The patient was running a fever of 100.3°. An indwelling catheter was placed in the bladder and it was lavaged with 1:10,000 zepherin every three hours. The patient received adequate fluids and penicillin, 100,000 units every four hours.

The patient improved symptomatically. On November 27, two weeks after admission, cystoscopic examination revealed a small spastic bladder with marked trabeculation and a chronic type of cystitis. The roentgenogram (Fig. 1) revealed a very small bladder. He was kept on indwelling catheter drainage and bladder irrigations with sulfadiazine and penicillin until the urine cleared of pus, blood and bacteria.

On December 14, a transurethral resection of the bladder neck was performed. An indwelling catheter was removed on the fifth postoperative day. The urine was cloudy at this time. The patient could void as much as 300 c.c. There followed an additional estimated 150 c.c. of involuntary urination. He voided every two hours. On the seventh postoperative day he had a chill with the temperature going to 105°. The catheter was immediately replaced. The temperature dropped several hours later to 101° and the following day it returned to normal. The catheter was again removed on the ninth postoperative day, following which he voided approximately 200 c.c. at a time, every two to three hours. He still had involuntary urination, especially during the night. Because of his mental state, I felt it would be advantageous for him to go home for Christmas and return later.

The patient was readmitted on December 26, afebrile and urinating without difficulty. His fluid output at this time was 1,500 c.c. However, he did have several episodes of urinary incontinence. His urine had a pH 5 with a specific gravity of 1.021, a trace of albumen and 200 pus cells, few bacteria and a few red blood cells per high power field cells. The urine varied between this amount of pus to where there were occasional red blood cells and 50 to 60 cells per high power field.

The patient had a marked intolerance for penicillin, and shortly after the second admission the drug was withdrawn. He immediately became afebrile. He was given streptomycin, 2,000,000 units in divided doses daily.

Because of the rather unsatisfactory results of the previous resection, on January 28 a cystoscopic and cystographic examination was performed. The bladder capacity had increased from approximately 40 c.c. to about 180 c.c. After placing 300 c.c. of media in the bladder, both ureters and the left kidney pelvis filled with the opaque media (Fig. 2). There was a marked destruction of the left kidney. No dye came through this kidney after intervenous injection of indigo-carmen.

On February 10, the bladder neck was again resected and approximately 2.5 grams of tissue were removed. The bladder at this time was markedly improved. There was no reaction following the operation. The catheter was removed on the third day. The patient was instructed to void every two hours. The bladder was at times filled with water, and the patient was instructed to attempt to shut off the flow of urine while voiding.

After several weeks he became entirely continent during the day and had only rare involuntary urinations at night. The patient was discharged with completely clear urine. He had remained dry for a period of about ten days, and his general health had definitely improved. The change in mental status was remarkable.

From the Department of Urology, St. Luke's Hospital, Duluth, Minnesota.

He had taken a new lease on life and was looking forward to doing some sort of work. Because of the status of the left kidney, however, he was asked to return for another check-up.

Fig. 1. Roentgenograph revealing early severe contraction of urinary bladder.

Fig. 2. Roentgenograph revealing increased capacity of urinary bladder and extreme left hydronephrosis and hydro-ureter.

He returned on May 1, free of all symptoms with the exception of some frequency, burning, smarting and at times an urgency which allowed an escape of a small amount of urine. He did not think he had been running a fever. The urine, however, had a marked pyuria and he was again put on streptomycin. After clearing the urine, a retrograde filling study was again done. It had previously revealed a marked destruction of the left kidney with no measurable function. I felt that there was no visible tissue in this kidney and that it was serving as a focus of infection. Therefore a left nephrectomy was accomplished on May 15. The kidney (Fig. 3) had a grade III hydronephrosis. The patient made an entirely successful and smooth convalescence and was discharged on May 31 with complete control of his urine, and the urine was crystal clear.

On December 1, an intravenous pyelogram revealed no changes in the right kidney from the previous examination. A urinalysis revealed at this time only a few pus cells. He had been working steadily and had had complete control of his urine at all times.

Discussion

The past decade has seen a marked revision in treatment of neurogenic bladder dysfunctions. The etiologic factors involving the spinal cord include trauma, congenital anomalies, inflammation, degeneration, and neoplasm. Regardless of origin of the neurogenic bladder, the transurethral treatment is directed to the problem of relieving a spastic bladder and vesicle neck obstruction which does not permit the proper emptying of the bladder.

There have been several excellent classifications, but for practical consideration it is necessary only to divide the conditions into the (1) atonic, and (2) hypertonic type of bladder. The treatment is the same for both groups. The atonic type of bladder is seen in the tabetic and during the first or shock phase immediately following injury. The hypertonic or chronic stage is met with in all long standing cases except the tabetic bladder and is usually seen in from two to six months after the initial injury.

Cystometric examination has not been satisfactory except in determining the type of bladder, while cystoscopic examination reveals not only the type but affords an ample opportunity for studying the vesicle neck as well as the bladder structure. It follows that a competent neurological examination is essential.

During the acute stage, an indwelling catheter with closed drainage, well tolerated, is entirely satisfactory. Bladder infection should be carefully controlled with chemotherapy and irrigations. It is of importance to maintain a good blood electrolyte balance. Great care is to be exercised in the control of decubitus lesions which usually accompany cord trauma.

After the acute stage, transurethral resection is the present choice of therapy. This form of treatment has been extended with gratifying results to include bedridden patients. The rationale is that of removing the vesicle neck obstruction which is due to hypertrophy of the detrussor muscles and fibrosis at the bladder neck. The resection should be carried out in the entire circumference of the vesicle neck and distal to the veru.

Serious bleeding is often encountered if too enthusiastic a resection is carried out. It is far better to accomplish the resection in several stages rather than go too deep in an attempt to remove the entire obstruction. It has been my practice to give the patient a fair trial following the resection before resorting to further procedure. A patient must also be mentally equipped to co-operate, and he must have a desire to do so. Much of the success or failure depends on the careful and close co-operation between the patient and the physician following the surgical procedure.

QUESTION: What are the main symptoms in differential diagnosis?

ANSWER: Symptoms vary, of course. The neurogenic factor is usually known because of the cord lesion. One must be ever on guard for an ectopic ureteral orifice which may cloud the diagnostic picture. The symptoms vary according to the amount of infection and renal involvement. The incontinence is usually not a constant drip as is found in damage to the sphincter, but the urine escapes in spurts intermittently.

QUESTION: What tissue is removed in this type of case?

ANSWER: That again varies. It is usually a mixture of hypertrophy of the detrussor muscles and fibrosis. In the elderly patient one must, in addition, remove varying amounts of prostatic tissue. It is the muscle hypertrophy and fibrosis that forms the "collar" which obstructs.

QUESTION: What is the cause of the bilateral hydronephrosis and hydro-ureter?

ANSWER: Unquestionably the etiological factor is the long-standing bladder neck obstruction. This same type of upper urinary tract destruction is encountered with congenital urethral valves and, in rare instances, long-standing prostatic obstruction. However, the latter is of minor consequence, usually due to the fact that it receives adequate attention.

QUESTION: Were tuberculosis and syphilis ruled out in this case?

ANSWER: Yes. For the sake of brevity, this was not adequately discussed. However, the guinea pig tests were normal and also the blood Wassermann test.

Conclusion

It is not generally known among the profession that urologists have been accomplishing gratifying results in patients suffering from neurogenic bladder dysfunctions. Although immediate treatment is important to prevent upper urinary tract destruction, some cases of many years' duration may be greatly improved.

I have presented a case of a thirty-year-old man, the victim of a congenital lumbar spina-bifida and meningocele, complicated by neurogenic bladder, bilateral hydroureter, bilateral hydronephrosis with marked renal damage to the left kidney. Transurethral resection of the bladder neck and left nephrectomy resulted in a satisfactory physical and mental change in what had been considered a completely incapacitating and hopeless condition of many years' duration.

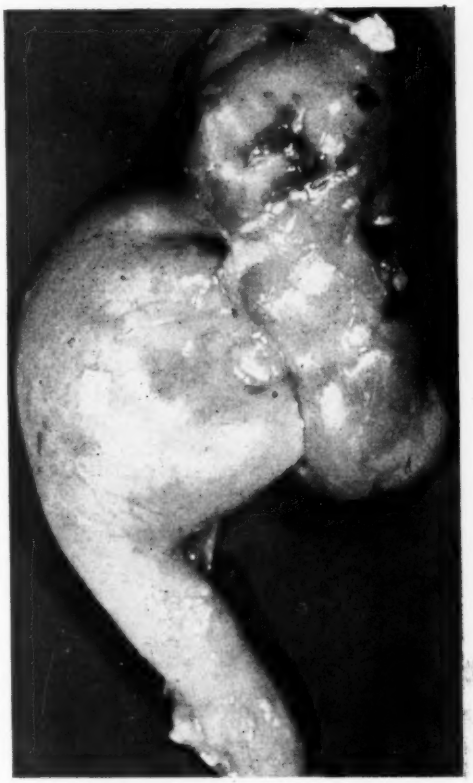

Fig. 3. Photograph of hydronephrotic kidney.

TEAMWORK IN PUBLIC HEALTH

More effectively than any other approach, medicine and public health can build a conception of common human need, of the single destiny that awaits life on this planet, whether it be good or evil. We are members of one human family, fighting the same enemies of disease and suffering. Only by united effort can we survive, and the field of public health can be a practical demonstration of a new kind of teamwork. It can be a bridge across the gulf that separates this frightened present from a saner and better balanced future. Symbolically and literally, it can bring its healing techniques to a human society that is desperately sick.—RAYMOND B. FOSDICK, Am. J. Pub. Health, Jan., 1948.

Case Report

TUBERCULOSIS OF THE HIP

JACKSON E. UPSHAW, M.D., and WILLIAM H. BICKEL, M.D.
Rochester, Minnesota

A CASE of tuberculosis of the hip which was interesting in the excellent result obtained, as well as the difficulty experienced in diagnosis, is being reported. The fact that this patient, who had proved tuberculous infection of the hip, obtained a spontaneous arrest of the process and maintained almost a complete range of painless motion in the hip is felt by us to be unique.

A perusal of the literature reveals a paucity of cases of tuberculous involvement of the hip in which a good result was obtained in so far as motion was concerned. Hyde[1] stated in 1932: "Adequate motion returns to a tuberculous hip only when the diagnosis is made at the incipiency of the disease and treatment immediately instituted. When such a result is obtained, the diagnosis may justifiably be doubted unless it is supported by incontrovertible bacteriological or pathological proof." This statement is felt by us to be as applicable to cases seen currently as it was in 1932; in view of the rarity of cases of tuberculosis of the hip in which good function is recovered, we report the following case.

Dr. Upshaw is a Fellow in Orthopedic Surgery, Mayo Foundation and Dr. Bickel is in the Section on Orthopedic Surgery, Mayo Clinic, Rochester, Minnesota.

Report of Case

A Negro boy, four years of age, was admitted to the Mayo Clinic, April 28, 1943, and the following history was obtained: The patient had been well until January, 1943, when following a fall on the left hip as his feet slipped on a waxed floor, a limp developed and he seemed to have some pain in the left hip. After the limp had persisted ten days the boy's mother took him to a physician, who treated him by traction to the left leg for a week and then applied a plaster cast. The cast remained in place some two months and was removed April 20, 1943, one week prior to his coming to Rochester. The patient had walked with a pronounced limp during that week.

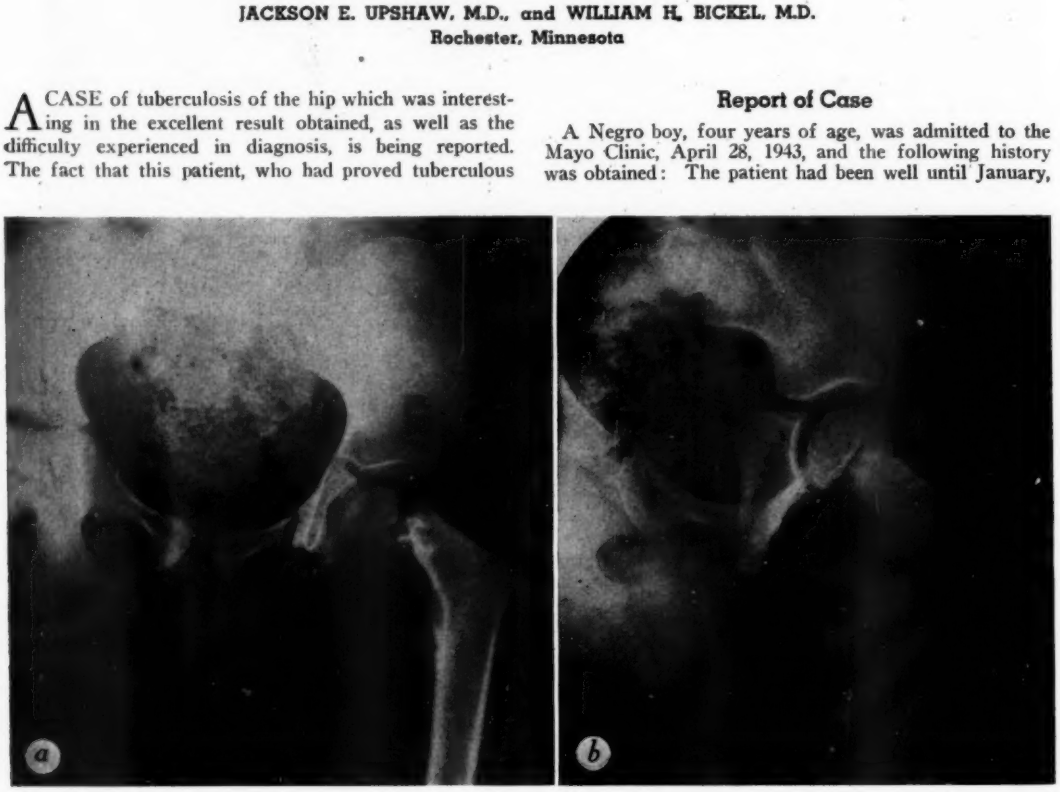

Fig. 1. Left hip on admission April 28, 1943. (a) Anteroposterior view. (b) Lateral view.

Physical examination on admission gave essentially negative results except for findings referable to the left hip. There was slight limitation of flexion and of internal and external rotation. Slight palpable grating was felt in the left hip on motion. There was no tenderness. The legs were equal in length. The Trendelenburg sign was mildly positive on the left and negative on the right. The patient walked with a marked limp.

Roentgenograms (Fig. 1) revealed a peculiar type of destructive lesion of the femoral neck in the epiphyseal region with separation of the capital epiphysis and some fragmentation and erosion of the upper end of the neck. There was some upward displacement of the neck of

the femur with rotation of the femoral head. Roentgenograms of the thorax were negative except for calcified hilar nodes on the left. Routine examinations of blood and urine revealed normal findings, and serologic examination gave negative results.

Although a tuberculous infection of the hip was regarded as a possibility, it was felt that the clinical history and roentgenologic findings were not entirely compatible with a diagnosis of tuberculosis of the hip and that a chondroma or bone dysplasia of the epiphyseal region could not be ruled out without a biopsy. Accordingly, exploration of the left hip was carried out on May 4, 1943. When the lesion in the neck of the femur was approached, thickening of the capsule and soft tissue was seen. When the capsule was opened, some caseous necrotic material was encountered. The cartilage on the head of the femur appeared normal. Specimens of the thickened tissue and necrotic material were sent to the pathologist, who reported tuberculosis. When this report was received, the tissues were closed tightly and a spica plaster cast was applied. The results of subsequent examination of fixed slides of the material taken for biopsy and of the guinea pigs separately inoculated subcutaneously and intraperitoneally with material removed from the hip at operation were positive for tuberculosis.

Treatment consisted of immobilization in a series of double spica plaster casts for fourteen months with the hip in slight flexion, abduction and internal rotation. Following immobilization a walking caliper brace was used for ten months. In September, 1945, two years

Fig. 2. Anteroposterior view January 15, 1944, after eight months of immobilization in a double spica cast.

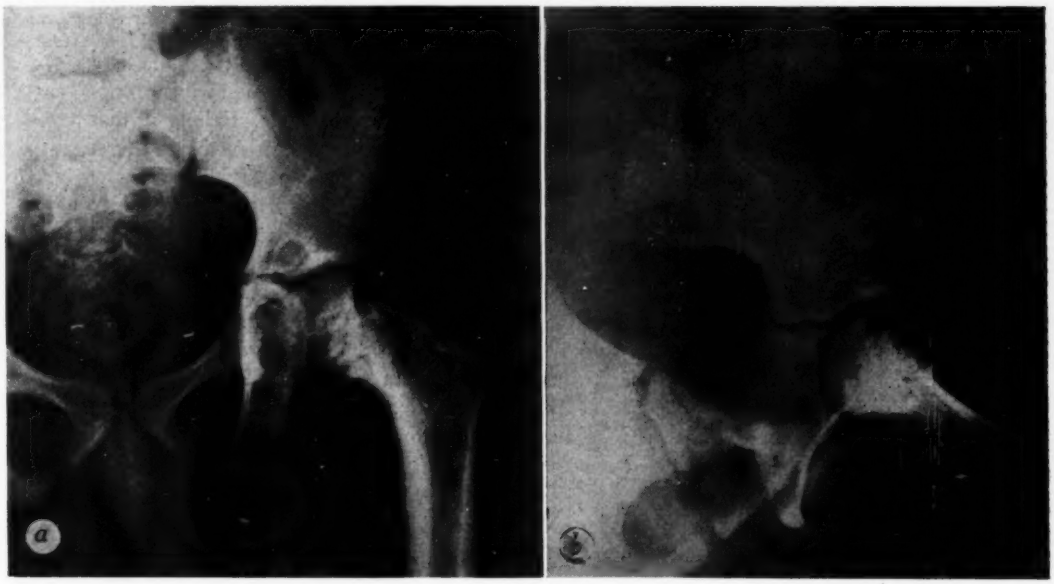

Fig. 3. June 10, 1946, nine months after resumption of normal activity. (a) Anteroposterior view. (b) Lateral view.

and eight months after the onset of symptoms in the hip, the patient was allowed to resume normal activity and start school. Frequent recheck examinations and roentgenograms made during the period of active care revealed steady progress toward healing (Fig. 2) of the bone lesion and a remarkable retention of active motion.

On June 12, 1946, three and a half years after the onset of symptoms, the patient was last seen. At that time almost complete, if not complete, resolution of the tuberculous process was noted in roentgenograms of the hip (Fig. 3). Some osteoporosis of the inferior portion of the head was still present and two cystic regions about the acetabulum were present which, it was felt, would bear watching. Flexion of the hip could be carried out from 180 to 110 degrees. There was slight limitation of internal and external rotation. Other motions of the hip were normal. The patient walked with only a very slight limp. His general health was good and physical examination gave negative results except as noted. He had completed the previous nine months' school term, indulging the rigorous activity of the normal schoolboy, without suffering from any disability from the hip.

Reference

1. Hyde, C. L.: Tuberculosis of the bones and joints in children. Am. Rev. Tuberc., 26:625, 1932.

History of Medicine In Minnesota

A HISTORY OF MEDICINE IN SCOTT AND CARVER COUNTIES

Scott and Carver Counties were settled in the early fifties, at favorable town sites along the Minnesota River. Thomas A. Holmes, one of the earliest "town site hunters" in the Northwest, came up the river in the spring of 1851 and located the sites of Shakopee and Chaska. Almost immediately Shakopee flourished as a settlement. Dwellings, stores, churches, and a post office had been erected by the spring of 1853 when Scott county was established by the territorial legislature.

Holmes sold the site of Chaska to David Fuller in the spring of 1852 for $1,000. The next year the first settlers, mostly Germans from Saint Paul, arrived. Carver County, together with several other counties, was established by the territorial legislature in 1855. In that year the long stream of immigration began in earnest. The Sioux tribes left Scott and Carver counties, and more safety was afforded the settlers. Country districts became populated after 1857, when town site speculation crashed and settlers turned to farming.

Dr. Frederic N. Ripley was the first physician in Scott County. He came as a trader and land claimer, and did not intend to support himself by his medical practice alone. He spent the winter of 1852-1853 in trade at Shakopee. Failing in that venture, he gave it up in the spring, but continued the practice of medicine there. During the first year, Dr. Finch and Dr. Kinney, both of Saint Paul, made the trip up the river occasionally and attended the sick. Dr. Kinney had a claim shanty at Shakopee, and he must have made several trips up the river to protect it since his claim was vigorously disputed. During the summer of 1853, many of the settlers weré ill of fever, and a number of the children died. At such times, many of the settlers vainly attempted to treat themselves. One of the most ill founded "cures" was the placing of powdered sulfur in the stockings as a treatment for the grippe. Dr. John L. Wakefield settled in Shakopee in the spring of 1854. He was a graduate of Yale and had had six years of practice prior to his arrival. He too laid out a claim. He was, in fact, accused of claim jumping. However, he made no permanent enemies since he was a fine doctor and was badly needed in the community.

In the same year, thirty-six-year-old Dr. John Landenberger, settled at Helena, Scott County. He was famous among early sportsmen as the most successful and the most frequent participant in the chase. It was said that he brought home three to seven deer from each day's hunt. Both Dr. Landenberger and Dr. Wakefield practiced in Scott County for many years.

Dr. Charles Lord was another early settler who came to Carver County in 1854. His health had failed, and he believed, as did many others, that the climate of Minnesota would be a favorable change. Incidentally, many consumptives came to Minnesota for the same reason that brought Dr. Lord; and, as a result, the Minnesota death rate was augmented considerably. Dr. Lord staked out a 160-acre claim near Shakopee in the fall of 1854. He farmed during the fifties; and in 1864, upon regaining his health, he moved to Shakopee and practiced medicine there for the next twenty-three years.

The spring of 1855 brought an inrush of immigrants, and with them came cholera. Shakopee was one of the leading river points on the Minnesota at that time, and the disease was brought by boat up the river. In addition to the usual summer fevers there was an epidemic of typhoid. Dr. Josiah S. Weiser and Dr. A. O. Risley came to Shakopee that summer, making a total of four practicing physicians there, so that one or two of them must have been available at all times.

These men were prospectors as well as physicians. Dr. Risley came as a member of the North Western Pioneer Company and made frequent trips around the territory procuring and surveying town sites. Dr. Benedict Lehmann, who came to Carver county in 1856, pushed farther to lay out the village of Helvetia on the Crow River. The hardships of such a life are epitomized in the experience of Shakopee's first physician, Dr. F. N. Ripley. Late in the year 1855 he moved to a town site belonging to him near the source of the Crow River, now the town of Litchfield. He camped there during the winter; in March he and a companion started from Cedar City to Forest City to obtain supplies. Half way there they strayed from the road and wandered for two days in a snow storm. Exhausted, the doctor lay down to die. McLelland, his companion, kept on and at length found an unoccupied cabin, where he spent sixteen days with little food and no fire. He was found, half-starved and badly frozen, by an exploring party and was brought to town. There both his legs were amputated. McLelland surmised that the doctor's remains had been devoured by wolves, as he himself had experienced difficulty in keeping the wolves off while in the cabin. The beautiful lake at Litchfield is named Ripley, presumably for the doctor who first laid out the town.

Amputation of frozen limbs was not uncommon in the experience of the pioneer physician. One account from the *Shakopee Independent* for April, 1856, reads:

> Amputation was performed severing both members slightly above the ankle, the patient meanwhile under the influence of chloroform. The operation was performed by Drs. C. L. Davenport, Wakefield, Weiser, and Leriemondie, and is spoken of as being an exceedingly well executed and delicate surgical operation.

C. L. Davenport, mentioned in the above, came in 1856. He remained but a few months in Shakopee and was a co-partner of Dr. Weiser. Several other physicians settled in Scott County before 1860. Among them was Dr. Phillip M. Williams, a typical Virginian of good breeding in search of adventure or a fortune. He was a gentleman and made friends on all sides, but soon he passed on in search of a larger field. Dr. Salisbury was the first physician in the township of St. Lawrence, Scott County. In addition to the practice of his profession, he taught the first school there. Physicians were among those best fitted for civic duty where schooling was a prerequisite. William A. Griffin, the first resident physician in Carver County, held many public offices. He became the first justice of the peace in the town of Carver, and was also the village president and treasurer. Dr. Weiser served as mayor of Shakopee in 1858.

Weiser's further adventures are deserving of note since his death precipiated one of the major engagements of the Indian war in Dakota, the Battle of Big Mound. In 1862 he was appointed surgeon to the First Regiment of Mounted Rangers, although at the time he was only twenty-nine years old. The following account is based on official records:

> While pursuing a large body of Indians in the summer of 1863, the troops under General Sibley were halted at Big Mound, North Dakota. Through the interchange of communications between the scouts, the Indians expressed a wish to have a conference with General Sibley. He having been warned of danger declined. Dr. Weiser, however, went among the Indians,

many of whom he knew, and returned to camp saying they only wanted peace. He shortly returned to the top of Big Mound with two or three other persons and was almost immediately shot and killed. His companions escaped by hard riding and by the bad marksmanship of the Indians. As soon as the killing of Dr. Weiser was known, General Sibley ordered the First Battalion to attack the Indians, which they did, accompanied by some companies of the Sixth and Tenth infantry regiments. A fearful thunder storm came on during the attack and lightning killed one cavalryman, but the Sioux were routed; and although it was against Sibley's orders, a number of rangers brought back scalps in revenge for Dr. Weiser's death.*

Difficulties with the Indians touched the lives of many of our pioneer physicians. At the time of the Indian outbreak in 1862, Dr. John L. Wakefield of Shakopee was physician at the Yellow Medicine Indian Agency. The doctor escaped but the members of his family were captured by the Indians and held for six weeks until rescued by the troops.

The pioneer physician endured more than the usual hardships of an early settler. The cold winters were hard for everyone, and the roads were always difficult to travel; but it was the physician's duty to go out at any time, whatever the weather, and to travel for hours on horseback over nearly impassable trails with all the speed he and the horse could endure. Illustrative of their hardships is a quotation from the diary of an old settler regarding Dr. Southworth, who established a practice at Belle Plaine during the middle fifties:

> Old Dr. Southworth is dead. He had so much practice that it wore him right out.

Dr. John A. Macdonald who settled in the vicinity of Chaska about 1859, was a pioneer physician who became prominent. In the year 1864 a severe epidemic of smallpox raged in both Carver and Scott Counties, and Dr. Macdonald did much to relieve the sufferers. He wrote an article published in the *Valley Herald* (April, 1864) for the purpose of calling the people's attention to sanitary and preventive measures. It read:

> The painful fact that smallpox in some of its various grades, from that of varioloid to that of the confirmed confluent, has broken out in this vicinity is now no longer a matter of doubt. . . .

The following were, in brief, his recommendations:

> (1) Not to give way to unnecessary fears, for by doing so they greatly affect the nervous system, (2) cleanliness of person, clothing, and dwellings; no direct communication to be held with persons affected, (3) for persons believing themselves attacked not to be swallowing by the wholesale boxes of cathartic pills, (4) children above the age of six months should be immediately vaccinated. I am sorry that much apathy is shown by parents in this matter. (5) re-vaccination, especially after seven or eight years have elapsed since the first vaccination, (6) removal of valuable articles of wearing apparel, extra bed clothing, et cetera, to a distance from the affected room where they may be freely exposed to a current of pure air. (This to be done on the first appearance of the disease.) This precaution will prevent clothing from communicating the disease to others.

The epidemic was almost immediately checked at Chaska. The deaths were attributed more to want of timely treatment and imprudent exposure than to the violence of the disease. There were a few cases at Chanhassen and several mild ones at Carver during the month of April. At the same time, smallpox appeared at Shakopee. An early settler wrote in his diary:†

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*Quoted in somewhat abbreviated form from the *Shakopee Argus Tribune*, December 20, 1928.

†Diary of D. M. Storer, published in the *Scott County Argus* in 1899 under the title of "Pioneer Days—A Daily Résumè of Early Scenes and Events in the History of Shakopee."

April 1-4. There is a good deal of excitement in town about the smallpox. There are two cases of it and some of the people had just as leave spread it as not.
April 12-14. Our boy is quite sick from the effects of vaccination.
July 5-9. The smallpox is in town again, there being two cases of it.

In August a number of cases of smallpox appeared in Carver County some ten miles from the river. Dr. Macdonald reported that five children in a German family died from its effects because he was called too late to render them any assistance. The disease seemed to be of a virulent form. Several cases of a lighter type appeared at that time within two miles of Chaska. Many people in both counties had the disease in a mild form throughout the following winter. The citizens of Chaska became alarmed again toward spring, and many parents took their children out of school. No quarantine regulations existed, no means of isolation was provided, and there was no board of health. As was anticipated, the disease reached alarming proportions in several localities as spring approached. In May of 1865 the towns of Sand Creek and Helena had twelve to fifteen deaths. In the spring of 1865, Chaska's only physician, Dr. Macdonald, joined the Second Minnesota Cavalry as First Assistant Surgeon. That left Chaska, a town of between 800 and 900 persons, without a resident physician.

During the next few years, little sickness was reported either in Chaska or in Carver. A number of physicians tried to establish practices in each town, but, attracting few patients, they moved on. Residents of Chaska called on Dr. Griffin of Carver or Dr. Wakefield of Shakopee when need arose. Smallpox recurred here and there, noticeably in January, 1867. Measles became prevalent at Waconia in 1868. Except for a few of those patients there was not much practice for a new physician in the locality.

Shakopee was visited by scarlet fever during the first years of the sixties. A severe form of the disease appeared in the summer of 1860 and spread rapidly. A number of children died during the summer, and the epidemic continued into October. In the next year several more scarlet fever deaths occurred, but the disease affected only the children.

It was not until 1870 that Carver County appointed a county physician, while Scott County appointed one about fifteen years later. Until then the county poor funds had covered whatever bills were incurred when the county commissioners called for medical care of paupers. The county physician had no responsibility or authority in the prevention or control of disease; it was for the purpose of disease control and prevention that the towns bestirred themselves, and boards of health in the larger towns were organized about 1872. But it was not for a decade or more that physicians gained control of the boards. Smaller communities appointed temporary health officers during epidemics, usually at the command of the state board of health.

A series of violent epidemics visited both Carver and Scott Counties in the first years of the seventies. Diphtheria, which had not been extensive in previous years, became a matter of serious concern during the fall and winter of 1874. Belle Plaine and Chaska felt it severely, and there were many deaths.

In December, 1870, there seemed to be more illness in Carver County than at any other time, as recalled by some of the residents. Typhoid and scarlet fever were most common. Dr. E. H. Lewis had just arrived in Carver, and the rush of patients gave him a running start toward popularity and success. The doctor at Chaska, as well, was kept busy since this community also had a great many cases of scarlet fever. It was reported that scarlet fever still raged in Carver County in January, 1871, especially at Carver. Dr. Lewis had over a dozen cases in the first week of January, counting only those of the Swedish settlement there. Several children died

of the disease at Shakopee in December, 1870. The following year there were sixteen scarlet fever deaths and eleven typhoid deaths in Scott County out of a population of 11,000.

Scarlet fever had barely run its course by 1872, when an epidemic of smallpox again struck the Minnesota valley. Early in 1870 it had prevailed in the neighborhood of Young America, in Carver County. Six or seven cases appeared there during March, and most of the people were vaccinated. The cases at Young America, however, appeared to be an isolated forerunner to the epidemic of 1872. It broke out first at Carver, and Dr. Lewis reported a dozen cases about a mile from town in December, 1871. By January 4 the *Chaska Valley Herald* announced that most of the persons in the county had been vaccinated. Hancock town must have been an exception because several new cases appeared there the next week. Dr. Lewis visited Hancock and vaccinated seventy-nine persons in one day. More cases appeared throughout the county; several victims died at Laketown and at Carver during January. In the first month of the epidemic, steps were taken to prevent the spread of the disease at Chaska. It was resolved by the village board that:

The president appoint a committee of three from the Board to act in conjunction with the Board of Supervisors in making such regulations as they may see fit to prevent the spread of smallpox, and that they are also impowered to hire such persons and expend such moneys as they may find necessary to carry out this resolution.

The president then appointed a committee of three as a board of health, and another resolution was adopted which read as follows:

Resolved: That no funeral procession where the diseased died of smallpox shall be allowed to pass through the principal streets of the village of Chaska and the Board authorizes the Committee appointed above to see that this resolution is enforced.

A third resolution read:

Resolved: That all physicians practicing within the limits of the Incorporated Village of Chaska shall notify the president, Hon. F. E. DuToit, of all cases of smallpox immediately after finding the same and failing to do so they shall be fined in the sum of $25 for each and every offense.

The following was also adopted:

Resolved: That any and all persons having cases of smallpox within their families are hereby prohibited from coming into the Village of Chaska on par and penalty of $25 for each and every offense.

Several residents of the town contracted the disease, and many others were exposed. More regulations were made by the board of health, in the first week of February, as follows:

I. That all persons sick or connected with families sick with smallpox shall remain confined within their own houses until cured of the same and for a further period of not less than two weeks.

II. That all persons who may have intercourse with persons having smallpox either in or outside of Chaska shall be subject to the same restrictions as specified above for those in whose families the disease is found.

III. No children belonging to or residing with any family having a case of smallpox in their house, shall be allowed to attend any of the public schools of said place.

Any person violating an order of the Board of Health is subject to a fine of $100 or imprisonment for three months. A strict compliance with this law will be enforced.

The first case in Scott County appeared at Shakopee during the first week of January. A German woman coming from Europe had been exposed to smallpox while passing through New York. As soon as it became known that she had the disease, the city council took charge of the premises where she was stopping. The council then issued an ordinance allowing the city to take complete charge of cases of contagious disease within the city. It also provided "that the Committee on Health of the City of Shakopee should provide a place of reception or hospital for the sick when a disease dangerous to the public health breaks out in the city." The usual type of quarantine regulations were stated and also "that the committee on Health shall see that the provisions of this ordinance are strictly complied with." Violation penalties were not to exceed $25 fine or thirty days in jail. Many of the citizens were vaccinated, and no other cases appeared in Shakopee.

Later in the month of January the disease broke out at Belle Plaine. It was thought to have been brought from Carver, a short distance across the valley. Some fifteen cases appeared in five families there, and several deaths resulted.

Sand Creek appointed a board of health about February 1 and took steps to prevent the spread of smallpox. Only one case was known in the town, but others had been exposed. At Jordan, a child became ill of smallpox, and the town adopted regulatory measures immediately. The board of health reported that all the school children of Jordan had been vaccinated "except one whose father had not sufficient wisdom to understand its utility." The trustees closed the school until the immediate danger was past. Other than the one mentioned, no further cases appeared at Jordan. After February the danger was over. Belle Plaine alone continued to suffer. Scarlet fever still lingered there early in the year, and a new outbreak of smallpox occurred near there in August.

In the year 1872 there were about ten physicians in Scott County, two or three residing at Shakopee, three at Jordan, two at New Prague, one at Belle Plaine, and one at Helena. Carver County had three physicians at Carver, two at Chaska, and others at Watertown, Hancock, Waconia, and Young America. This averaged, roughly, one physician for every 1,400 people for each county. Several villages of 1,200 or more had no physicians. The practice of many of these men covered hundreds of square miles, and they traveled from place to place by wagon and team. Naturally the doctor who owned the best and fastest horse got the most calls. In this district, crossing the river was particularly hazardous. Dr. Lewis of Carver lost a fine horse while crossing the ferry. After getting on the boat, his horse became frightened and jumped into the river, dragging the buggy with him. The doctor lost a valuable case of surgical instruments as well as his horse. The experience of Dr. C. S. Stoddard, who hung out his first shingle at Shakopee in March, 1874, is related as follows:**

> Dr. Wakefield, an old and much beloved physician had died but a few months before and there was a vacancy in the professional ranks. . . . The morning after my arrival I called upon Dr. Charles Lord, the only physician then residing in the place. . . . My second patient was an old lady living six miles east of Shakopee near Bloomington ferry. Mike Ryan took me out with his own team and sleigh late in the afternoon, during a snow storm, promising to surely bring me back the same evening. But before we were ready to return a terrible blizzard came on, and although we had started well on our return trip we found it utterly impossible to face the storm, the horses absolutely refused to go, and we returned to the house to wait till morning. . . . The storm increased, continuing two days and nights. . . . While awaiting for the storm to abate, my services were called into requisition in a neighbor's family, and now, after an experience of 26 years, I am ready to declare that I have never met with so serious a case in all its symptoms and consequences. Of course, I was unprepared for the emergency without instruments or medicine, and felt like a man forced into battle with his hands tied behind him. . . .

**Dr. C. S. Stoddard, "Looking Backward," published in the *Scott County Argus*, March, 1900.

Still I did all I could under the circumstances and I was left in the condition of the young doctor of whom I have heard, who upon being asked how he was succeeding with his first case of obstetrics, replied, "Very well. I have lost the mother and child, but by skillful attention I hope to pull the old man through."

Upon my return to Shakopee on Monday, we met the funeral procession of my first patient who had died during my enforced idleness.

. . . It was really quite a discouraging start for a young physician whose diploma was scarcely dry. . .

I was occupied with patients from the very first . . . looking backward now from my present standpoint of experience, I am led to wonder at the very generous patronage that was accorded me. . .

. . . There was no bridge at Shakopee at that time and we depended upon the ferries in summer and the ice in winter. One of these called the "upper ferry" was on the road leading to Chaska and owned by Ed Bass, while the lower ferry was on the road to Eden Prairie and was under the management of Mr. Wilcox, when he was not too sound asleep to be awakened by the long calls and mental cursings of the doctor anxious to reach his suffering patient on the other side.

Dr. Stoddard had some difficulty with German patients as he could not speak German, but he soon learned enough to get along. Continuing, in his own words, with the story of his early difficulties:

A son of Mr. Rivers of Eden Prairie had shot himself and I was summoned in great haste to his relief. Mr. R. drove the team and I was kept uncomfortably busy trying to stay in the wagon, expecting to be bounced out at every chuck hole, and there were many of these, dark and deep, in the old road which crossed the lower ferry and the bottom lands which lay beyond.

Another interesting phase of the life of the pioneer physician is brought out in Stoddard's mention of an exchange of services between a doctor and a blacksmith. The blacksmith, who had just married, offered to do all of Dr. Stoddard's smithing for a year if Stoddard would take care of his medical needs for the same period. The agreement was made, and at the end of the year there proved to be a difference of only fifteen cents in their accounts. Storer's diary mentions the same kind of arrangement. A town lot was given in payment to Dr. Weiser by the writer himself for medical services during a period of illness.

Strange cases confronted the doctor of pioneer days. Dr. Macdonald was once called upon to stitch up a horse's tongue which had been nearly cut off. Another account tells of a man who was gored by an elk. Burns from boiling water, and injuries to arms and legs caught in farm machinery were common accidents.

Quacks and "cures" were readily believed. It may be noted that during the 1870's the small town newspaper encouraged the acceptance of both. During the summer of 1877 two quacks, who claimed to be cancer specialists, came to Shakopee. They would mislead their patients who came to them with various cancers by first pretending to extract the cancer and then exhibiting to the patient various small animals, dead or alive. They made good profits and disappeared before those who had been "relieved" of toads, snakes and such, became dissatisfied.

Dr. Jacob Haas, of Chaska, a man of questionable reputation, was appointed county physician in 1874.†† All the doctors in the county, eight in number, had applied for the office of county physician, and the citizens of the town were surprised, disgusted, and somewhat amused. (Dr. Haas had offered to accept a salary of $250 instead of the customary $450 per year.) Immediately the Carver representative of the *Valley Herald* pointed out that the entire community hoped "the Board of

††He was not recognized by the members of the medical fraternity of the county or state as a physician, nor did he belong to any school of medicine. Furthermore, he was known to spend a large part of his money in the saloons while his wife and invalid child suffered in want. Nevertheless, his practice was said to be very large.

County Commissioners would have self-respect enough to reconsider their action and fill the place by a respectable physician." He mentioned also that Drs. Lewis, Grant, and Griffin belonged in the latter classification. A battle ensued on the printed page, with one issue of the paper publishing the invectives of the Carver correspondent and the next a mild defense from those of the county commissioners who had voted for Haas. It appeared that a resolution had been introduced immediately after Haas was appointed, saying "that the salary of the County Physician be drawn by an agent to be appointed by this Board whose duty it shall be to pay the same to his family (the Physician's) from time to time as in his judgment their necessity may require." Three of the five county commissioners were Germans and had voted for one of their own countrymen regardless of their civic responsibility. At last the situation was remedied by the appointment of reputable deputy physicians for certain districts, thus limiting Haas' responsibility. The next year a new plan, previously suggested by Dr. Lewis, was put into effect. Each commissioner had the privilege of calling on any doctor he chose to attend the poor residing in his district, at a certain rate per mile (about 25 cents). Medicines were furnished. Evidently extra amounts were paid for surgical operations or special treatments.

Many small or local epidemics struck Carver and Scott Counties during the last quarter of the nineteenth century. Among the diseases common to children there were measles, cholera infantum, whooping cough, chicken-pox, and spinal meningitis. Influenza, or the so-called *"la grippe,"* appeared frequently in isolated cases, and every few years in epidemic form, most noticeably during the nineties. Comparatively few cases were fatal, however. Lung fever was not uncommon, and many fevers and inflammations, inexpertly diagnosed, were given as the cause for deaths. Scarlet fever, smallpox, and typhoid continued their ravages from time to time.

By far the most fearful and frequent of epidemics was diphtheria. In 1878 it prevailed in several parts of Scott County, as well as in other parts of the state. In 1880 the *Shakopee Argus* published a circular from the state board of health giving the causes and means of preventing or checking diphtheria, since it continued to linger in that locality. The fall of 1881 brought an epidemic of the worst type, centering at Shakopee, which was then a town of around 2,000. Twelve persons died there of diphtheria before the New Year, and many more were affected. The committee on health was ordered to act according to Ordinance No. 12, made at the time of the 1872 smallpox epidemic. The committee investigated all cases suspected of being diphtheria and ascertained whether or not the patient suffered from that disease. They were allowed to employ two physicians. Permission was also given the city council "to cause each patient to be removed to a hospital to be established for that purpose, and to cause the premises where the sickness occurred to be thoroughly disinfected, or else to cause a red flag to be displayed at the front door of the house where such sick persons might be; and to adopt such quarantine regulations as might be necessary to prevent communication between the inmates of such house and the other inhabitants of the city." It was further resolved that all cases of suspected diphtheria were to be reported to the committee on health.

(To be continued in the May issue)

President's Letter

CANCER REMAINS MAJOR CHALLENGE

Throughout the month of April, we physicians rededicate ourselves to an important public service by joining in the observance of National Cancer Control Month. The physician can give direction and purpose to the cancer fight—he is the vital link in the chain by which it is hoped one day to subdue cancer and prevent it from further menacing human life.

There are three lines of defense against cancer. First, the patient; second, the practicing physician; and, third, the specialist. Like the corners of a triangle or the legs of a tripod, each one is as important as the other two; without one the others are useless, incomplete, ineffective.

The patient himself is mentioned first because it is he who must learn to know the danger signals of cancer and seek help when they appear. To strengthen this defense, we need intelligent education on cancer to counteract the fear and dread and the false modesty, which, especially for women, so often proves an ally of death. We physicians must help in this effort to educate the people; and we can help by cultivating to an even greater degree a friendly, sympathetic attitude and by being the kind of doctor that a timid, distressed person will turn to and find reassurance. The job of educating the public on cancer is indeed a complicated one. The symptoms of cancer are intimate, personal; yet they must be presented impersonally. Confidence must be built up in the mind of the public; yet false hopes must not be raised.

Because the practicing physician is placed second on our list of cancer defenses, it does not follow that he is any the less important. In reality, he is right on the firing line. He is the one to whom the patient brings his symptoms to be interpreted. Thus a heavy responsibility rests upon the medical profession to spearhead the attack on cancer. Even though health education in cancer is making people "cancer conscious," a patient cannot diagnose or cure his own cancer. Cancer patients are oftentimes saved or lost, depending upon the practicing physician's knowledge and ability to observe. The family doctor must read the signs and take appropriate action, or refer the patient to someone who can.

The third line of action against cancer—the surgeon—holds the key to whatever remedy is possible. He, together with the pathologist and the radiologist, provides the best line of offense to actually eradicate cancer from the human body. No matter how alert the patient and the doctor may have been, without the technical skill of this third unit any cancer case is lost.

Cancer control today is far from the hopeless problem that it was just a few years ago. There is reason to take heart and renew efforts in all phases of the cancer fight. We are seeing results in our cancer education; astounding progress is noted in the field of research considering the baffling nature of cancer. The sad fact is that cancer research needs MORE financial support and MORE trained workers than it now commands. More material aid to the cancer laboratory would produce even bigger life-saving dividends.

Recent trends indicate that cancer is just beginning to come under control. Real progress is being made in reduction of deaths, particularly among women. Education has played some part, but a number of other factors—largely the result of milestones attained through laboratory and clinical investigation—are also at work. Two notable examples are reduction in the number of birth injuries that go uncorrected, which is reducing cancer of the cervix, and better mouth hygiene which is cutting down cancers of the mouth.

It is only reasonable to believe that even more significant progress will be attained by advances in medical and surgical treatment with achievement of more adequate financial support. Cancer control, indeed, remains a foremost challenge, both to the medical profession and to intelligent laymen.

President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

REBATES TO OCULISTS

THE publication of the names of oculists cited by the Federal Government in its price fixing suit, which appeared in the press February 15, came as a surprise to the profession in general. The average physician had no idea that the practice of accepting rebates from opticians by oculists was as widespread as the citation claimed. The citation does not establish guilt, although it must be admitted that where there is smoke, usually there is fire.

The unpleasant situation involves two questions —one of professional ethics and the other of legal liability.

If an oculist charges his patient a fee for refraction and accepts a rebate from the optician who supplies the glasses, there can be no question but what he is guilty of a breach of medical ethics, essentially fee splitting. This practice has been repeatedly declared unethical by the organized profession, and the apparent widespread practice and attendant publicity to the detriment of the medical profession as a whole has caused general resentment among its members.

Whether the acceptance of rebates by oculists subjects them to legal action is a matter of law about which we would not attempt to express an opinion. The Federal Government contends that the oculists and optical firms are guilty of conspiracy to fix the price of glasses in violation of the Sherman anti-trust act. Whether an actual conspiracy can be proven in the forthcoming trial remains to be seen.

The purchase of a pair of glasses after receiving a prescription from an oculist would seem to be a simple matter. It apparently is not so simple, and the way the glasses are supplied varies greatly. Some oculists depend on the optical house to fill the prescription and fit the glasses, and he checks the correctness of the lenses supplied. Some oculists have to send out of town for the filling of their prescriptions. They must fit the glasses and assume the risk of breakage in so doing as well as spend more time on the fitting. A group of physicians or an oculist sometimes hires an optician's services and thus makes a profit over and above his fee for refraction. Or an oculist may conceivably own stock in an optical shop. The question of ethics may thus be rather involved.

If, as the Government contends, the optical houses are making rebates to oculists as high as 50 per cent of the cost of glasses, the price of glasses is considerably higher than it should be. The usual effect of competition is to maintain the price of an article at a level which provides a reasonable profit. The only competition which would seem to exist in the sale of glasses would be in the percentage of rebates made to the oculists. The Government will doubtless try to prove that such a high price for glasses could be maintained only by a monopoly in the supply of materials that go to make up a pair of glasses on the part of two large optical houses.

The supplying of glasses to the public is obviously in a very unsatisfactory condition and requires correction. If the prospective trial will result in the clearing of the practice, with a resulting reduction in the price of glasses to a proper level and the entire elimination of rebates, it will be an outcome to be highly desired. We trust that the trial will not be long postponed for the sinister purpose of keeping the unfortunate picture in the public eye for political purposes. The sooner the air is cleared by the establishment of guilt or innocence, the better.

PROPYLTHIOURACIL

THE value of propylthiouracil in the treatment of hyperthyroidism has been established. Although more toxic than thiouracil on a weight basis, the smaller dose of propylthiouracil required to establish a normal basal metabolism is much less likely to produce toxic symptoms, and has a more prolonged effect. The action of both drugs is in the prevention of the utilization of iodine by the thyroid gland.

Propylthiouracil should be given in 50 mg. doses every eight hours initially in the more

severe cases of hyperthyroidism and only twice a day in milder cases. As the patient improves, the dosage is decreased and 25 to 50 mg. daily is usually sufficient to maintain a restored normal basal metabolism.

While it is possible that the use of propylthiouracil may produce permanent remissions in some cases, its main usefulness is in the preparation of individuals with hyperthyroidism for operation. After the basal metabolism has been reduced to the neighborhood of plus 20, iodine in the form of Lugol's solution should be added and continued for two or three weeks before operation. Some administer iodine with the propylthiouracil from the beginning of treatment. Iodine fosters the involution of the gland which results in less bleeding at operation.

Although propylthiouracil has proven its great value in the preparation of hyperthyroid patients for operation and may prove, as time goes on, to be of even greater value in obviating the need for operation in a larger percentage of individuals, it should be remembered that occasionally toxic manifestations in the form of leukopenia or even agranulocytosis, fever or dermatitis does result. Periodic checks of the blood picture should, therefore, be made, and patients receiving this medication should be warned to report the occurrence of sore throat, fever or dermatitis at once.

RETROGRESSION IN MEDICAL ADVERTISING

MOST physicians of today cannot go back in memory to the days when anyone could advertise almost anything in a medical journal irrespective of its intrinsic scientific value. The practicing physician had no way of feeling certain that a remedy advertised in any medical journal had proven scientific value.

The situation became so bad that the leaders in the American Medical Association realized that something must be done to clean up medical advertising. In 1905 the Council on Pharmacy and Chemistry was established, and outstanding members of the medical and allied professions, for the most part associated with medical schools were asked and consented to serve on the Council. The Council's unbiased opinions, from a clinical and laboratory standpoint, on the usefulness of remedies were to be and have been the basis of the Council's approval or disapproval. The A.M.A., by action of its House of Delegates, deleted many advertisements from its medical publications, taking a considerable financial loss and has since restricted its advertisements to Council-accepted articles.

In 1912, the Board of Trustees established the Cooperative Medical Advertising Bureau for the benefit of the state medical journals. Its function was and is to procure advertisements for the state journals, and members of the Bureau in turn agreed to limit their advertisements to Council-accepted products. Certain leeway was allowed publication committees of the state journals in the acceptance of local products. The existence of the Bureau has been a great source of economy for all the member journals and has resulted in the maintenance of high advertising standards in those journals. MINNESOTA MEDICINE has been a member of the Bureau since it began publication. The *Illinois Medical Journal* has never been a member of the Bureau, and the *New York State Journal of Medicine*, while agreeing for a brief period to accept only Council-approved articles, has for a period of years accepted unapproved advertising.

It is to be regretted that recently the *Rhode Island Medical Journal* and *California Medicine* have strayed from the fold and have left the Cooperative Medical Advertising Bureau. Recent issues of *California Medicine* have contained unapproved advertisements. This is obviously a step backward, in refutation of the Council on Pharmacy and Chemistry, taken for revenue only. This lack of co-operation on the part of these four journals affects all the other state journals financially and lowers the status of medical advertising in general. The House of Delegates of these four states could, of course, bring their journals into the Bureau if they so wished, and should be urged to do so.

PUBLIC DEMAND FOR SERVICE AT NIGHT

The American Medical Association calls on county medical societies to meet the public demand for emergency medical service at night.

"From many sections of the United States," says an editorial in a recent (March 6) issue of *The Journal of The American Medical Association*, "complaints have come lately that persons who have called physicians late at night have been unable to secure attendance from either those whom they considered their family physicians or from specialists or, indeed, from any physician."

The American Medical Association says that large county medical societies or urban groups should maintain a physicians' telephone exchange which would take the responsibility for locating physicians if response is not made to the ringing of the telephone in the home or in the office.

The solution is simple and practical, requiring only a minimum of community organization. A number of county medical societies already maintain a physicians' telephone exchange where doctors' calls may be received and doctors located if their office or home telephones do not respond. Such an exchange can be utilized as at night or on holidays, simply by furnishing the exchange with a list of physicians who are able and willing to make night calls. Such physicians would probably include the younger general practitioners, newcomers to the community, and others in general practice. If such a roster were available, and its availability widely publicized, night calls for medical service would soon gravitate to this center and the patient would be assured the services of a physician.

Under such a system the necessity for calling many doctors would be eliminated. Two calls at most would be necessary. Where there is no physicians' telephone service, it might be possible to have the hospitals cooperate by handling such night calls.

The Medical Society of the District of Columbia and the Milwaukee County Medical Society have found such a plan practical, as have a number of other societies.

By this simple and practical expedient, which is doubtless in effect in modified form in a number of communities, the sick can be served and the medical profession can redeem its pledge of unselfish public service.

It is highly important that where such arrangements exist they be brought to the attention of the lay people in the community through appropriate public channels, not once but repeatedly, to keep the shifting populations well informed.

Few problems in the field of medical service have aroused so much public discussion. Whether resentment against physicians is justified or not, it does harm. The solution for this problem is so eminently simple and would reflect so favorably upon physician-patient relationships that medical societies everywhere are urged to give it serious consideration immediately.

MINNESOTA DEPARTMENT OF HEALTH

Public health nurses and nursing advisory committees throughout Minnesota will join with others throughout the nation in observing Public Health Nursing Week, April 11 to 17. The theme of Public Health Nursing Week this year is "Help your public health nurse help your community."

The present status of public health nursing services in the state shows considerable improvement over the situation a year ago, says Miss Ann S. Nyquist, director of the Division of Public Health Nursing, Minnesota Department of Health. The State Legislature in March, 1947, passed an act subsidizing public health nursing by allowing $1,500 a year from state funds to assist any county in establishing or extending public health nursing services.

During the past year, eleven Minnesota counties have established public health nursing services and eight counties have employed additional nurses. There are now 464 public health nurses in Minnesota, about equally divided between the large cities and the rural areas. Fifty counties now have generalized public health nursing services. Thirteen counties that have set up provisions for public health nursing services report vacancies, and there are still twenty-four counties that have no rural nursing service.

In the three large cities of the state, there is a ratio of one public health nurse to every 3,622 people. This is a very favorable ratio, according to the standards of the American Public Health Association, which recommends at least one nurse to every 5,000 people. In the rural areas of Minnesota, however, one nurse must serve, on the average, 11,013 people. An effort is now being made to train more nurses for work in rural communities, both in hospitals and in public health work. State licensing of practical nurses is also likely to improve the situation somewhat in the rural areas. Already 450 Minnesota women have taken examinations for licensing as practical nurses.

MINNESOTA NURSES ASSOCIATION

The need for students to fill the classes of Minnesota's schools of nursing is of vital importance to every citizen—particularly to members of the medical profession and to hospital administrators.

The Minnesota Nurses' Association has been carrying on a recruiting program for several months, but despite this effort students are still needed for spring classes in both professional and practical schools of nursing. At least 1,500 students will be needed to fill the fall classes, always the largest.

The U. S. Department of Labor estimates that between 500,000 and 600,000 practicing professional nurses will be needed to fill the demand by 1960. This makes the enrolling of students in our schools of nursing a long-range and important question.

In its campaign to interest qualified young women in the profession of nursing, the association has emphasized the following points, and they are factors with which everyone interested in the nursing situation should be acquainted.

More nurses are needed because:

1. The public is demanding not only more but more specialized nursing care.
2. There are more hospital beds today than ever before in the history of the country.
3. An extensive hospital building plan is under way and young women will be needed to staff these institutions.
4. The public health program is growing by leaps and bounds and more nurses are needed in this field.

Thus it is obvious that after a young woman finishes her education in nursing there will be plenty of vocational opportunities for her for years to come.

Nursing offers a greater variety of jobs than any

other profession. A young woman may choose to be a general staff nurse in a hospital, a supervisor, an operating room nurse, a teacher of nursing, a school nurse, a country nurse or an industrial nurse, or an office nurse. There are many more sections of the broad field of nursing also.

Today schools of nursing offer one-year courses in practical nursing and children's nursing.

Not only are the educational opportunities flexible but many schools have scholarship funds and loan funds to help a qualified student receive her nursing education.

Mrs. Dolores Colesworthy of Minneapolis is enrollment chairman of the Minnesota Nurses' Association. She suggests that anyone wishing more information about educational and vocational opportunities in nursing make inquiries at the Association's office, 2642 University Avenue, Saint Paul 4, where all the facts about it have been collected.

PRACTICAL NURSE LICENSURE IN MINNESOTA

To carry out the law relating to licensure of practical nurses and accreditation of schools of practical nursing, Governor Luther Youngdahl appointed three additional members to the State Board of Examiners of Nurses to serve for the purposes of this act only. These persons were Dr. Phillip F. Eckman of Duluth, Miss Alice Barlow, L.P.N., on nursing staff at Minnesota Soldiers' Home, Minneapolis, and Miss Dina Bremness, R.N., superintendent, Glenwood Community Hospital. Their appointments became effective as of August 1, 1947, and since that time, this augmented board has had several meetings at which policies and regulations regarding the licensure of practical nurses, and standards for accreditation of schools of practical nursing have been determined.

An advisory committee composed of representatives from vocational education, practical nurse education, professional nursing groups, hospital, dietetic and medical organizations, the Minnesota Practical Nurses Association, and the Women's Division of the Farm Bureau Federation was organized. This committee has given helpful suggestions to the board in its new undertaking. Miss Ella Mae Thompson, president of the National Association for Practical Nurse Education, served in an advisory capacity for one week during the period when the standards for accredited schools were being formulated.

The working manual containing standards and guides for schools of practical nursing has been sent to fourteen schools; in addition, several other agencies which are considering establishment of schools have copies.

The law is a permissive one and does not prohibit anyone from nursing the sick for hire, who does not assume or represent to be a Licensed Practical Nurse. The abbreviation, L.P.N., is official for those who receive licenses. In order to qualify, applicants must have at least eighth grade education or its equivalent, be at least 18 years of age, possess good health and character, and have graduated from an accredited school of practical nursing or its equivalent. Among these equivalents are at least two years of general experience in practical nursing under the supervision and direction of physicians and registered nurses. In some instances, applicants may qualify with less than two years' experience because of education in a school of basic professional nursing, or because of training as hospital corpsman, et cetera, in military service.

On February 21, the first examination was held in Mankato, Moorhead, Duluth, and St. Paul. Four hundred and sixty-one practical nurses wrote at that time. Of this number, 187 were graduates of the Vocational Hospital School of Practical Nursing, Minneapolis; forty-two from the Franklin Hospital School of Practical Nursing in Minneapolis, and fourteen from the Union Hospital School in New Ulm. Of this group, 424 or 92 per cent passed and were granted licenses. The next examination will be held in August or September, 1948.

AMERICAN PUBLIC HEALTH ASSOCIATION

The executive board of the American Public Health Association has announced the seventy-sixth annual meeting of the association as taking place in Boston, Massachusetts, November 8 to November 12, inclusive, 1948.

This congress of professional public health workers is the largest of its kind held anywhere in the world. It will be attended by representatives from all parts of the United States, Canada, Cuba and Mexico, and from Latin American countries. Delegates from Europe and Asia are also expected.

Meeting with the American Public Health Association will be many related organizations which select the same time and place as the association for their annual meetings. Among them are:

American School Health Association
Association of Maternal and Child Health and Crippled Children's Directors
Association of Reserve Officers of the U. S. Public Health Service
Association of State and Territorial Health Officers
Conference of Municipal Public Health Engineers
Conference of Professors of Preventive Medicine
Conference of State and Provincial Public Health Laboratory Directors
Conference of State Directors of Health Education
Council of State Directors of Public Health Nursing
National Committee of Health Council Executives
Public Health Cancer Association

An extensive scientific program is in preparation, with the current problems in mind of public health dentists, engineers, epidemiologists, food and nutrition specialists, health officers, industrial hygienists, laboratory workers, maternal and child health experts, public health educators, public health nurses, school health specialists and vital statisticians.

The membership of the American Public Health Association now approaches 12,000 and an attendance of 4,000 is anticipated at the Boston meeting. Dr. Reginald M. Atwater is the association's executive secretary, with offices at 1790 Broadway, New York 19, N. Y.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

TOP GRADE MEDICAL CARE IS DOCTOR'S FIRST DUTY

Doctors of medicine can be of greatest service to the public in three ways—by providing top grade medical care, by promoting public health and by acting as counsellors and leaders in community life.

This was the conclusion reached at the annual County Officers' Meeting held February 28 in Saint Paul. Purpose of the meeting was to discover ways in which medicine can increase its usefulness to the public. A panel of physicians reported on public service activities now being carried on by the Minnesota State Medical Association.

Following this, a forum entitled "The Public Speaks" was held, at which representatives of labor, rural groups and the press suggested ways in which medicine can improve its services.

High quality medical care, administered by qualified and conscientious physicians should be the first consideration of the medical profession when it seeks ways in which it can be most helpful to the public, it was suggested. This does not rule out health education. However, radio programs, health releases and the like are merely adjuncts of top grade medical care.

Advocates Professional Unity

Speaking on the need for interprofessional cooperation, Dr. Charles G. Sheppard, Hutchinson, advocated unity of the medical profession, itself, as the first step. Without good family relations, he warned, the profession cannot function at its best. Having achieved internal unity, the medical profession must strive to promote friendly cooperation and relationships with members of the other professions dealing in health matters—dentists, nurses, pharmacists, hospital administrators, social service workers and others. Public health problems, Dr. Sheppard said, can best be solved through the joint efforts of all of these groups.

Dr. Sheppard called special attention to the work being done by the State Department of Health and praised the department for its "aggressive stand against inroads of socialized medicine whenever that apparition has reared its head in federal state health programs."

The work of the MSMA's Committee on Rural Medical Service was described by the chairman, Dr. Paul C. Leck, Austin. He advocated the establishment of health councils in the communities throughout the state which will bring together all organizations, voluntary and official, having an interest in health and welfare. He reported that preliminary steps were taken recently to establish health councils in several communities. Groundwork has been laid in Austin, Worthington, Fergus Falls and Mankato to bring together various groups to discuss plans. Dr. Leck expressed the hope that these councils will be established in the near future.

Public Policy Outlined

The five-point program of the Association's Committee on Public Policy was outlined by the chairman, Dr. Reuben F. Erickson, as follows:

1. Information and education for the general public in methods which will bring the highest possible quality of medical and hospital care for everyone, everywhere.

2. Co-operation with all lay and professional groups whose aim is the preservation of professional freedom and continued improvement in individual and national health.

3. Encouragement and promotion of agencies providing medical and hospital services on a voluntary, pre-payment basis.

4. Support of legislation promoting wider and more effective distribution of quality medical care.

5. Defeat of legislation which will result in a lowering of medical standards.

Dr. A. E. Cardle, Association president, speaking on public health education, stressed the importance of keeping the public informed on health matters. He pointed out that the public is often reluctant to seek medical aid simply because it has not been educated to the value of it in preventing as well as curing disease.

Fight Fear and Ignorance

Dr. Cardle told the delegates, "If the people are reluctant to claim protection which is rightfully theirs, it is the medical profession's duty to break down the barriers of fear and ignorance and bring health to the people in spite of their reluctance. Certainly curing disease is hardly more noble than preventing it."

A review of the home-town medical care program for veterans, which has been in operation one year here in Minnesota, was reported by Dr. Ralph H. Creighton, chairman of the Veterans Medical Service Committee. He stressed the importance of this program as a public service activity, saying that veterans deserve the best medical treatment possible and expressing the hope that physicians in the state would continue to cooperate in this effort to provide treatment needed.

It was the duty of your Medical Economics editor to lead off the session by endeavoring to point out the need for public service activities. It is your editor's firm belief that the public will follow the able and sympathetic doctor, and in order for medicine to carry out its programs it must secure the confidence and support of the public. All of these public service activities are important, but they must not be allowed to replace the basic purpose of the high calling of medicine—that of ministering to the sick, the relief of suffering and the prevention of disease insofar as is possible.

Public Wants More Co-operation

During the forum which featured the public viewpoint, the delegates learned that the medical profession needs to provide even more health education, to extend prepayment programs for medical and hospital services and to co-operate more fully with other public-spirited organizations.

Speaking for labor, Mr. Orlin Folwick, public relations counsel for the Minnesota State Federation of Labor, called attention to the fact that workers need perhaps even more health care than any group in the population because of the hazards of their jobs, accidents, et cetera, and the need to keep labor healthy to assure maximum production.

The need for increased co-operation with the press was cited by Mr. Kenneth Crouse, Saint Paul *Dispatch-Pioneer Press* staff writer. Mr. Crouse said that the press regards the medical profession as one of its main allies, since life, death and sickness make up a major part of the day's news.

Representing rural leaders in Minnesota, Mr. J. S. Jones, executive secretary of the Minnesota Farm Bureau federation, discussed the wants and needs of rural people in terms of general better living conditions. In seeking to improve living conditions on farms and in rural communities, he said, people naturally want to enjoy health and medical protection on par with that obtainable in cities. He also stressed the importance of budgeting for medical care and encouraged physicians to use every means to promote the spread of prepayment medical and hospital plans. He pledged the support of farm leaders in this effort.

Public Relations Summarized

A diagnosis and interpretation of the present status of medical public relations was presented at the evening dinner by Mr. Theodore R. Sills of Chicago, public relations counsel to several national organizations, including the American Medical Association. Mr. Sills warned the doctors to watch for and heed "danger signals" in public opinion. Politicians, he said, are watching the public closely; and when they feel that the public is anti-doctor and anti-organized medicine, there will be stringent laws enacted.

Mr. Sills suggested the old rule of public relations be applied: "Do good and tell the people about it." He stressed the fact that public relations is "not a whitewash brush." First comes the "do good." First, he said, medicine must have a constructive public service program; then in addition it must avoid acts which will antagonize the public.

Mr. Sills also pointed out that in order to carry out an effective public relations program, every member of the medical profession, individually, will have to assume his part in establishing good relations with his patients.

RED CROSS DEVELOPS BLOOD BANK PROGRAM

A program to build up supplies of whole blood throughout the country is now under way sponsored by the American Red Cross and directed by Dr. Ross McIntire. The program here in Minnesota is not, however, set to start immediately and probably will not be launched until June of next year. In formulating plans, the American Medical and Hospital Associations and other groups concerned were contacted. It will be up to the medical profession to supervise the program, since a large share of the responsibility for the individual cases in which the blood is used will remain with the attending physician.

The Hennepin County Chapter of the Red Cross will not participate in the program because there is already in existence the Minneapolis War Memorial Blood Bank which will carry out the program of collecting, storing and dispensing blood for that locality.

State Committee Studies Program

The Committee on First Aid and Red Cross of the Minnesota State Medical Association has met to discuss this program. Before considering any action, the committee decided that more specific information about procedures for carrying on the program was necessary. Accordingly, a series of questions was drafted by the committee and sent to Dr. McIntire. In order that doctors in the state may be familiar with the Red Cross proposals, the questions submitted and the replies received are printed here:

1. *Will the donors be grouped, a Wassermann test be done, the Rh factor determined, and blood tested for anti-a-titre; where will these laboratory procedures be carried out?*

All donors will be serologically tested by the Kahn test and in many centers one additional test, such as the Wassermann, Hinton, Mazzini, etc. The blood group will be determined not only by the grouping of the red cells but generally by confirmation using a donor's serum against known cells. The Rh factor will also be determined by the use of at least two diagnostic serums in every case. The group O blood donors will be screened by high-titered anti-A, and anti-B agglutinins, so that certain group O blood donors may be set aside as "safe universal donors." All these procedures are to be carried out in the blood center by technicians suitably qualified and trained under the Red Cross program and supervised by a medical director or medical technical director.

2. *Are there any definite ideas as to the fee the physician may charge for the administration of the blood or plasma?*

Although the blood and blood fractions will be distributed by the Red Cross without charge for these products the matter of hospital service charge and physicians medical charge is in no way jeopardized. Since each blood center will be under the direct supervision of a committee of the local medical society, it will be possible for this organization to suggest a limit on the fee or a standard fee for hospitals or physicians.

3. *Will intravenous sets be furnished and if so, will they be rubber or plastic?*

Intravenous recipient sets, probably of the disposable variety, will be supplied with each unit of blood. These are at present plastic materials with a special nylon filter.

4. *What is the status of the danger of virus hepatitis in the use of this blood and plasma and is it true that irradiation eliminates this danger?*

The problem of serum hepatitis is still being explored by various research laboratories and to date there is no proof that irradiation eliminates this danger. All precautions will be taken as recommended by our advisory committee, made up of experts from all over the country.

5. *Will serum be made available? Will the plan urge cross-matching of the blood in the event that some error might occur in labeling the proper group on the bottle?*

Whole blood, packed red cells, plasma and fractions of plasma will be made available. Serum is not included. The program urges the re-checking of blood specimen tubes attached to each bottle, by the laboratory of the hospital using the blood, and cross-matching is a necessary preliminary.

6. *At what age will blood be discarded or sent in for processing? Will the ACD solution be used to prevent coagulation?*

The blood will be kept for seventy-two hours before distribution, and then since it is in ACD solutions may be used for the following eighteen days. Unused blood will then be re-collected for removal of the plasma for fractionation purposes.

7. *How soon after drawing blood will it be chilled? What will be the recommended degree of chilling?*

In general the bleeding bottles will be precooled before use in a refrigerator at 4 to 10° C. and the blood will be replaced in the refrigerator as soon as it is drawn.

8. *How will distribution centers be selected, especially in remote localities?*

Distribution centers will be selected according to needs and following application from local Red Cross chapters which have met the conditions required by the national organization. One of these conditions is the approval of

the local medical society and all medical groups involved in any community and the formation of a committee by such groups to supervise the activities of the blood center. Remote localities will be served by mobile units both for collection and distribution of blood, although in the latter case even planes may be needed.

9. *If blood from colored individuals is to be drawn, especially in places where there are few colored people, is it to be made available for those colored people or what will be recommended in the use of blood from colored people?*

The position of the American National Red Cross with regard to the segregation of blood from colored donors is that this remains a local prerogative. The Central Committee (formerly the governing body) of the American National Red Cross issued the following statement of policy regarding the segregation of blood in the National Blood Program:

"Inasmuch as, on the basis of recorded scientific and medical opinion, there is no difference in the blood of humans based upon race or color, the plan does not require the segregation of blood; however, whenever necessary to insure the success of the plan, which is to make available blood and blood derivatives to all the people of the United States regardless of race or color, chapters will collect and hold blood in such a manner as to give the physician and the patient the right of selection at the time of administration."

NATIONAL HEALTH ASSEMBLY CALLED

A ten-year federal health plan for this country is the subject to be discussed by a National Health Assembly being called by the Federal Security Administration for May 1-4, 1948.

It started out as another packed conference similar to the one held in 1938. When news of the conference first broke, it was revealed that out of an executive committee of twenty-four picked by Administrator Oscar R. Ewing, only one was a doctor, George F. Lull, Secretary and General Manager, American Medical Association.

An editorial in the AMA *Journal*, commenting on the obviousness of the health insurance propaganda motives behind the meeting and noting the lack of adequate physician representation, was answered by Mr. Ewing's belated addition of fourteen persons to the executive committee from several groups including the hospital, medical, nursing, dental and public health associations. Administrator Ewing, in announcing the conference, said that he was acting at the request of the President who wants him to develop "feasible national health goals for the next ten years."

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

Fake Doctor Must Serve One Year in Minneapolis Workhouse

Re State of Minnesota vs. Frank Herman Gold, also known as Frank H. Gould.

On March 8, 1948, Frank Herman Gold, also known as Frank H. Gould, thirty years of age, residing at 300 Fifth Avenue N. E., Minneapolis, was sentenced by the Hon. Levi M. Hall, Judge of the District Court of Hennepin County, to the maximum term of one year in the Minneapolis Workhouse. Gold was sentenced following his plea of guilty to an information charging him with the crime of representing himself to the public as a doctor of medicine without being registered under the Minnesota Basic Science Law. Gold was immediately taken to the Workhouse to commence serving his sentence.

The defendant was arrested on March 3, 1948, by Minneapolis police officers who discovered Gold representing himself to the public as a doctor after having purchased various surgical instruments and medicinal supplies in Saint Paul and Minneapolis. Gold, who was born in New York City and came to Minneapolis in 1941, was previously convicted of the same offense on May 21, 1946, in the District Court of Hennepin County. At that time Gold was placed on probation for one year by Judge Lars O. Rue. Shortly after Gold's probation expired in 1947, he purchased a rubber stamp on which he designated himself as a doctor of medicine. He also purchased the surgical instruments and medicines found in his possession by the Police Department at the time of his arrest. Gold has also married following his previous conviction and represented himself to his wife as a doctor. Gold, at the time of his arrest, was an employe of a Minneapolis bakery. During the seven years that Gold has resided in Minneapolis, he has been employed as an orderly at two Minneapolis hospitals and he has also worked as a clerk in three Twin City drug stores.

Former Minneapolis Abortionist Sentenced to Two Years in Federal Prison

Re State of Minnesota vs. James Lloyd Beckman

On March 16, 1948, James Lloyd Beckman, thirty-six years of age, 3425 Portland Avenue, Minneapolis, was ordered by the Hon. M. M. Joyce, Judge of the United States District Court, to serve two years in a Federal institution to be designated by the Attorney General of the United States. Beckman was brought into Federal Court following his release from the Stillwater Prison on February 24, 1948, where he had served a three-year sentence imposed by Judge Frank E. Reed of the District Court of Hennepin County on November 7, 1945,

(Continued on Page 412)

Minnesota State Board of Medical Examiners

230 Lowry Medical Arts Bldg., Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

PHYSICIANS LICENSED FEBRUARY 7, 1947
December 1946 Examination

Name	*School*		*Address*
ANDERSON, Myron George	U. of Minnesota	MB 1946	Miller Hospital, Saint Paul, Minn.
ANDERSON, Wallace Roger	U. of Minnesota	MB 1946	Minneapolis General Hospital, Minneapolis, Minn.
BARR, Ronald Wayne	U. of Minnesota	MB 1946	St. Luke's Hospital, Cleveland, Ohio
CARD, William Harrison	U. of Minnesota	MB 1946	111 Pratt St. So., Minneapolis, Minn.
CARTER, Robert Eldred	U. of Minnesota	MB 1946	Cleveland City Hospital, Cleveland, Ohio
CHAMBERS, Richard Owen	U. of Minnesota	MB 1946	420 Oak St. S.E., Minneapolis, Minn.
DEAL, Harold Raleigh	U. of Minnesota	MB 1946	Ortonville, Minn.
GINSBERG, Robert Louis	U. of Minnesota	MB 1946	1807 Ford Road, Saint Paul 5, Minn.
GRUYS, Robert Irving	U. of Minnesota	MB 1946	Maple Lake, Minn.
HANNON, Donald William	U. of Minnesota	MB 1946	1846 Sargent Ave., Saint Paul, Minn.
JENSEN, Adrian Richard	U. of Minnesota	MB 1946	5038 34th Ave. S., Minneapolis, Minn.
JOHNSON, Curtis Merlin	U. of Minnesota	MB 1946	Miller Hospital, Saint Paul 2, Minn.
JOLLY, Elizabeth Ann	U. of Minnesota	MB 1946	318 Harvard St., S.E., Minneapolis 14, Minn.
KELLY, James Harold	U. of Minnesota	MB 1946	Belgrade, Minn.
KEYES, Robert Walker	U. of Minnesota	MB 1946	Mercy Hospital, Chicago, Ill.
KOSIAK, William	U. of Minnesota	MB 1946	Milaca, Minn.
KOTTKE, Frederic James	U. of Minnesota	MB 1945 MD 1945	Division Physical Medicine, University Hospital, Minneapolis 14, Minn.
LARSON, Loren John	U. of Minnesota	MB 1946	2108 25th Ave. So., Minneapolis 6, Minn.
LEVIN, Bernard Benjamin	U. of Minnesota	MB 1946	903 Newton Ave. N., Minneapolis, Minn.
LICK, Louis Charles	U. of Minnesota	MB 1946	University Hospital, Minneapolis 14, Minn.
MacDONALD, Roger Allan	U. of Minnesota	MB 1946 MD 1947	Littlefork Hospital, Littlefork, Minn.
MACKOFF, Sam Mordecai	U. of Minnesota	MB 1943 MD 1944	1571 E. Maryland, Saint Paul 6, Minn.
MARK, Vernon Herschel	U. of Minnesota	MB 1946	5051 Fremont Ave. S., Minneapolis, Minn.
MAXEINER, JR., Stanley Robert	U. of Minnesota	MB 1946	5122 Garfield Ave., Minneapolis, Minn.
McGEARY, Malcolm Donald	U. of Minnesota	MB 1946	5045 Garfield Ave. S., Minneapolis 7, Minn.
McKENZIE, Eva Elaine	U. of Minnesota	MB 1946	512 Delaware S.E., Minneapolis, Minn.
McQUILLAN, John Ralph	U. of Minnesota	MB 1946	142 W. 49th St., Minneapolis 9, Minn.
MEYER, Robert Paul	U. of Minnesota	MB 1946	529 Tyman Place, Faribault, Minn.
MEYERDING, Eugene Villaume	U. of Minnesota	MB 1946	160 Prospect Terrace, Saint Paul, Minn.
NUDELL, Gerald	U. of Minnesota	MB 1946	Salt Lake County General Hospital, Salt Lake City, Utah
NUESSLE, William Frederick	U. of Minnesota	MB 1946	328 Cass Ave., Springfield, Minn.
PELUSO, Charles Robert	U. of Minnesota	MB 1946	318 W. King St., Saint Paul, Minn.
REEVES, Melvin Mitchell	U. of Minnesota	MB 1946 MD 1947	Good Samaritan Hospital, Portland, Ore.
ROLLINS, Troy Gaylord	U. of Minnesota	MB 1946	Elmore, Minn.
ROWBERG, Raymond Gerhard	U. of Minnesota	MB 1946	Le Sueur, Minn.
SANFORD, Raymond Arthur	U. of Minnesota	MB 1943 MD 1943	102-110 2nd Ave. S. W., Rochester, Minn.
SHAPERMAN, Martin Moses	U. of Minnesota	MB 1946	Mt. Sinai Hospital, Chicago, Ill.
SHRAGG, Harry	U. of Minnesota	MB 1946	Elmore, Minn.
SISTERMAN, Thomas Joseph	U. of Minnesota	MB 1946	1518 E. Lake St., Minneapolis, Minn.
STIEGLER, Farrell Soron	U. of Minnesota	MB 1946 MD 1947	2215 Plymouth No., Minneapolis, 11, Minn.
SULLIVAN, John James, Jr.	U. of Minnesota	MB 1946	Highland Park General Hospital, Detroit, Mich.
SULLIVAN, Robert Emmett	U. of Minnesota	MB 1946	5101 Dupont Ave., S., Minneapolis, Minn.
SUTHERLAND, Donald	U. of Minnesota	MB 1946	Minneapolis General Hospital, Minneapolis, Minn.
TAYLOR, Maxine Yvonne	U. of Minnesota	MB 1946	Department of Anesthesia, 950 E. 59th St., Chicago, Ill.
TETLIE, James Peter	U. of Minnesota	MB 1946	Swedish Hospital, Minneapolis, Minn.
UBEL, Frank Andrew, Jr.	U. of Minnesota	MB 1946	Brainerd Clinic, Brainerd, Minn.
VON DRASEK, Joseph Carroll	U. of Minnesota	MB 1946	St. Mary's Hospital, Duluth, Minn.
WAGNER, Paul A.	U. of Minnesota	MB 1943 MD 1943	2603 N. E. Union Ave., Portland, Ore.
WALLINGA, Jack Vance	U. of Minnesota	MB 1946	Cleveland State Receiving Hospital, Cleveland, Ohio
WATSON, John Robert	U. of Minnesota	MB 1946	Robert Packer Hospital, Sayre, Penn.
WEBB, John B., Jr.	U. of Texas	MD 1941	102-110 2nd Ave. S.W., Rochester, Minn.
WEDES, Deno John	U. of Minnesota	MB 1946	Madison General Hospital, Madison, Wis.
WILD, John James	U. of Minnesota	MB 1946	202 So. Lexington, Saint Paul 5, Minn.
ZUPANC, Edward	U. of Minnesota	MB 1946	Wisconsin General Hospital, Madison 6, Wis.

Reciprocity Candidates

Name	*School*		*Address*
GOOCH, James Oliver	Tulane U.	MD 1939	Mayo Clinic, Rochester, Minn.
MAZZITELLO, William Frank	Marquette U.	MD 1945	2089 Sargent Ave., Saint Paul, Minn.
THOMPSON, Hugh Jeffrey	U. of Minnesota	MB 1942 MD 1943	Student's Health Service, University of Minnesota, Minneapolis 14, Minn.

PHYSICIANS LICENSED FEBRUARY 7, 1947

January Examination

Name	*School*		*Address*
ADCOCK, Leon L.	U. of Minnesota	MB 1946	891 Rice Street, Saint Paul, Minn.
ADCOCK, Madeline S.	U. of Minnesota	MB 1946	Como Station, Rt. No. 3, Turtle Lake, Minn.
ATMORE, William George	U. of Minnesota	MB 1946	St. Mary's Hospital, Duluth, Minn.
ALLEN, Cameron Smith	U. of Manitoba	MD 1939	102-110 2nd Ave. S.W., Rochester, Minn.
ANDERSON, William Blair	U. of Minnesota	MB 1946	Salt Lake County General Hospital, Salt Lake City, Utah
BEYER, Eugene Franklin	U. of Minnesota	MB 1946	Miller Hospital, Saint Paul 2, Minn.
BODELSON, Adrian Haskell	U. of Minnesota	MB 1946	St. Mary's Hospital, Duluth, Minn.
BREY, Theresa Eileen	U. of Minnesota	MB 1946	Minneapolis General Hospital, Minneapolis 15, Minn.
CHAUSS, Jay Manuel	U. of Minnesota	MB 1946	150 Ocean Ave., Brooklyn, N. Y.
CROMER, JR., Horace Emerson	Med. Col. of Va.	MD 1939	102-110 2nd Ave. S. W., Rochester, Minn.
DANFORD, Kenneth Arthur	Temple U.	MD 1943	Mahnomen, Minn.
DAVIS, George Daniel	Indiana U.	MD 1938	Mayo Clinic, Rochester, Minn.
EBERT, Richard Vincent	U. of Chicago	MD 1937	Veterans Administration Hospital, Minneapolis 6, Minn.
ELDRED, Roy Edward	U. of Minnesota	MB 1946	Milwaukee County Hospital, Milwaukee, Wis.
FINE, Gerald	U. of Minnesota	MB 1946	844 Palace St., Saint Paul, Minn.
FLYNN, Robert Arthur	Loyola U.	MD 1945	Sparta Clinic, Sparta, Wis.
FRANKLIN, William Lewis	Indiana U.	MD 1943	508 Hume-Mansur Bldg., 23 E. Ohio St., Indianapolis, Ind.
GEIST, Jack Emil	U. of Minnesota	MB 1946	University of Iowa Hospitals, Iowa City, Ia.
GILSON, Betty St. Cyr	U. of Minnesota	MB 1943 MD 1943	109 23rd St. N., Great Falls, Mont.
GOOD, Robert Alan	U. of Minnesota	MB 1946	University Hospital, Minneapolis 14, Minn.
GORDON, Sewell S.	U. of Minnesota	MB 1942 MD 1943	5314 Wildair Drive, New Orleans, La.
GRAY, Cary Patton	U. of Oregon	MD 1943	102-110 2nd Ave. S.W., Rochester, Minn.
HALL, Wilson Benjamin	U. of Minnesota	MB 1943 MD 1944	Veterans Administration Hospital, St. Cloud, Minn.
HENNESSY, Mary Ellen	U. of Iowa	MD 1943	102-110 2nd Ave. S.W., Rochester, Minn.
HERMANN, Harold Wesley	U. of Minnesota	MB 1946	Caledonia, Minn.
HIESTAND, Harley Burmond	Indiana U.	MD 1942	2455 N. W. Marshall St., Portland 10, Ore.
HOGBEN, Charles Adrian Michael	U. of Wisconsin	MD 1943	102-110 2nd Ave. S.W., Rochester, Minn.
HUFF, Stanley Eugene	Northwestern U.	MB 1943 MD 1944	686 Fairmount Ave., Saint Paul 5, Minn.
HURSH, Philip Warner	U. of Minnesota	MB 1943 MD 1943	2507 Nicollet Ave., Minneapolis, Minn.
JACKSON, Alfred Edison	U. of Tennessee	MD 1942	102 110 2nd Ave. S.W., Rochester, Minn.
JENSEN, Richard Edmund	U. of Minnesota	MB 1946	St. Mary's Hospital, Duluth, Minn.
KELLY, JR., Charles Michael	U. of Minnesota	MB 1946	Cook County Hospital, Chicago, Ill.
LEDEN, Ursula Maria	Loyola U.	MD 1944	102-110 2nd Ave. S.W., Rochester, Minn.
LEE, Richard Harmer	U. of Minnesota	MB 1946	University Hospital, Iowa City, Ia.
McINTIRE, Scott Ferguson	U. of Minnesota	MB 1946	3027 Humboldt Ave. S., Minneapolis, Minn.
MALUF, Noble Suydam Rustum	Harvard	MD 1946	University of Louisville, Louisville 2, Ky.
MANN, Joseph Daniel	U. of Minnesota	MB 1946	Strong Memorial Hospital, Rochester, N. Y.
MARSHALL, Clark MacKenzie	U. of Minnesota	MB 1944 MD 1945	Northwestern Hospital, Minneapolis, Minn.
MERRILL, Joseph Grant	U. of Illinois	MD 1943	102-110 2nd Ave. S.W., Rochester, Minn.
MILLER, Albert Gordon	U. of Minnesota	MB 1946	University of Minnesota Hospital, Minneapolis, Minn.
MINKOWSKI, William Louis	U. of Minnesota	MB 1943 MD 1943	Veterans Administration Hospital, Department of Medicine, Kingsbridge Rd., Bronx, N. Y.
PETERSON, Oliver Hugh, Jr.	U. of Minnesota	MB 1946	Minneapolis General Hospital, Minneapolis 15, Minn.
PUTMAN, JR., Harrison C.	Northwestern U.	MB 1942 MD 1943	Mayo Clinic, Rochester, Minn.
RIDLEY, Roger William	U. of Michigan	MD 1943	Mayo Clinic, Rochester, Minn.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Name	*School*		*Address*
SHERMAN, Morris Hyman	U. of Minnesota	MB 1946	Kings County Hospital, 451 Clarkson Ave., Brooklyn, N. Y.
SUNDBERG, Carol Listmann	Northwestern U.	MB 1942 MD 1943	Mayo Clinic, Rochester, Minn.
SWANSON, Lawrence John	U. of Minnesota	MB 1946	159 N. Concord, South Saint Paul, Minn.
UPSHAW, Jackson Ewell	U. of Texas	MD 1942	102-110 2nd Ave. S.W., Rochester, Minn.
WAKSMAN, Byron Halsted	U. of Pennsylvania	MD 1943	102-110 2nd Ave. S.W., Rochester, Minn.
WANG, Jun-Ch'uan	U. of Minnesota	MB 1946 MD 1946	Mayo Clinic, Rochester, Minn.
WATTS, William E.	Harvard U.	MD 1942	Mayo Clinic, Rochester, Minn.
WOLFE, Lawrence Irving	U. of Minnesota	MB 1946	Ancker Hospital, Saint Paul 1, Minn.
WOODARD, Don Ernest	U. of Chicago	MD 1941	102-110 2nd Ave. S.W., Rochester, Minn.
ZINBERG, Samuel	U. of Minnesota	MB 1946	2012 Plymouth Ave., Minneapolis, Minn.

Reciprocity Candidates

COLFER, Harry Francis Andrus	Marquette U.	MD 1943	Mayo Clinic, Rochester, Minn.
DUGGAN, Asa Daniel	U. of Georgia	MD 1940	Mayo Clinic, Rochester, Minn.
EARNEST, III, Franklin	Jefferson Med. Col.	MD 1943	Mayo Clinic, Rochester, Minn.
ERB, Howard Renninger	U. of Pennsylvania	MD 1940	Mayo Clinic, Rochester, Minn.
FISHER, Robert George	U. of Pennsylvania	MD 1942	Mayo Clinic, Rochester, Minn.
GERACI, Joseph Emil	Marquette	MD 1942	Mayo Clinic, Rochester, Minn.
HAY, Samuel Hutson	Vanderbilt U.	MD 1940	Mayo Clinic, Rochester, Minn.
MARTENS, Irvin Joseph	St. Louis U.	MD 1943	Mayo Clinic, Rochester, Minn.
MILLER, John Ralph	Northwestern	MB 1935 MD 1936	Mayo Clinic, Rochester, Minn.
MUCCILLI, Albert Carl	Marquette U.	MD 1944	616 W. 3rd St., Duluth 6, Minn.
PERMAN, Harvey Henry	Washington U.	MD 1944	Wells, Minn.
POLLACK, Albert Abbot	Long Is. Col. of Med.	MD 1942	Mayo Clinic, Rochester, Minn.
RICKS, JR., Henry Crozier	Jefferson U.	MD 1944	Mayo Clinic, Rochester, Minn.
ROBINSON, William Click	Tulane U.	MD 1942	Mayo Clinic, Rochester, Minn.
SARGENT, Edward Chester, Jr.	Western Reserve U.	MD 1942	University Hospital, Minneapolis 14, Minn.
SCHLOTTER, Donald Cornelius	U. of Pennsylvania	MD 1937	Mayo Clinic, Rochester, Minn.
WILLIS, J., Theron	Louisiana State U.	MD 1942	Mayo Clinic, Rochester, Minn.
WILSEY, David Brown	U. of Wisconsin	MD 1939	Department of Anesthesiology, University Hospital, Minneapolis 14, Minn.
WILSON, Russell H.	U. of Oklahoma	MD 1940	Veterans Hospital, Minneapolis, Minn.

National Board Candidates

CASHIN, John Carney	McGill U.	MD 1943	Mayo Clinic, Rochester, Minn.
CHILDS, Donald Smythe, Jr.	Yale U.	MD 1942	Mayo Clinic, Rochester, Minn.
CIARAMELLI, Margherita Carmela	New York U.	MD 1943	Flower and Fifth Avenue Hosp., Fifth Ave. and 106 St., New York 29, N. Y.
DOLMAGE, George Howard	U. of Iowa	MD 1937	University Hospital, Minneapolis 14, Minn.
HOLCOMB, William Decker	Boston U.	MD 1935	Abbott Hospital, Minneapolis 4, Minn.
HORNING, Edward Douglas	Yale U.	MD 1943	Mayo Clinic, Rochester, Minn.
NACHTWEY, Robert Augustine	St. Louis U.	MD 1940	Mayo Clinic, Rochester, Minn.
TOWER, Donald Bayley	Harvard U.	MD 1944	Montreal Neurological Institute, McGill University, Montreal, Canada

PHYSICIANS LICENSED FEBRUARY 20, 1947

January Examination

National Board Candidate

Name	*School*		*Address*
ZORN, Eugene Laird	New York Med. Col.	MD 1941	Erskine, Minn.

Reciprocity Candidate

GRIFFIN, Richard Philip	U. of Iowa	MD 1944	111 S. 13th St., Benson, Minn.

PHYSICIANS LICENSED MAY 16, 1947

April Examination

Name	*School*		*Address*
BAGBY, George W.	Temple U.	MD 1946	Cannon Falls, Minn.
BARTNESS, John	Marquette U.	MD 1946	1501 E. 7th St., Superior, Wis.
BORGERSON, Robert James	U. of Illinois	MD 1943	Richland Center, Wis.
COLEMAN, John Ballinger	Northwestern U.	MB 1942	University of Minnesota Hospital, Dept. Radiology, Minneapolis 14, Minn.
COLL, James Joseph	Jefferson Med. Col.	MD 1939	Duluth Clinic, Duluth, Minn.

Name	*School*		*Address*
DIESSNER, Ardell William	U. of Minnesota	MB 1946	Northwestern Hospital, Minneapolis, Minn.
EICHHORN, JR., Edmund Peter	U. of Minnesota	MB 1943 MD 1943	402 W. Franklin, Minneapolis, Minn.
EMMONS, Robert Wayne	Indiana U.	MD 1942	957 Arcade St., Saint Paul, Minn.
ERCHUL, James William	U. of Minnesota	MB 1946	St. Mary's Hospital, Duluth, Minn.
FLOM, Reynold Phillip	U. of Minnesota	MB 1944 MD 1945	1124 Lowry Med. Arts, Bldg., Saint Paul, Minn.
FORD, Floyd Wendell	Col. of Med. Evangelists	MD 1947	915 NE Portland Blvd., Portland 11, Ore.
FRICKE, Raymond Woodrow	Northwestern U.	MB 1942 MD 1943	Mayo Clinic, Rochester, Minn.
GALLAGHER, Robert Paul	U. of Minnesota	MB 1943 MD 1943	Ortonville, Minn.
GORDON, Ian Esar	U. of Toronto	MD 1939	University Hospital, Minneapolis 14, Minn.
HAMMARSTEN, James Francis	U. of Minnesota	MB 1944 MD 1945	Veterans Hospital, Minneapolis, Minn.
HENRY, Harold William	U. of Minnesota	MB 1946	St. Louis City Hospital, St. Louis, Mo.
HENRY, Joseph Edward	U. of Minnesota	MB 1946	Milaca, Minn.
KANTAR, Bruce Leo	U. of Minnesota	MB 1944 MD 1945	3521 W. 29th St., Minneapolis, Minn.
KING, JR., Lyndon Marrs	Columbia U.	MD 1943	Minneapolis General Hospital, Minneapolis 15, Minn.
KUSTERMANN, Stuart Dean	U. of Minnesota	MB 1946	1067 14th Ave. S.E., Minneapolis, Minn.
LANGE, Robert Dale	Washington U., Mo.	MD 1944	Glen Lake Sanatorium, Oak Terrace, Minn.
LENGBY, Frederick Alexander	U. of Minnesota	MB 1943 MD 1944	1618 Berkeley Ave., Saint Paul 5, Minn.
LINDEMANN, Chas. Edward	U. of Minnesota	MB 1946	Milwaukee County Hospital, Milwaukee, Wis.
LUNDQUIST, Virgil J. P.	U. of Minnesota	MB 1942 MD 1943	4439 Cedar Ave., Minneapolis 7, Minn.
MacDONALD, Frank McIntyre	U. of Minnesota	MB 1946	801 12th St. N., Virginia, Minn.
McCLUSKEY, William Richard	U. of Minnesota	MB 1946	4933 Girard Ave. S., Minneapolis 9, Minn.
MELGAARD, Sven Ross	Washington U., Mo.	MD 1942	University of Minnesota Hospital, Department of Anesthesia, Minneapolis 14, Minn.
MENEFEE, Edward Curial	U. of Minnesota	MB 1946	Detroit Receiving Hospital, Detroit, Mich.
MERCHANT, Chas. Claire	U. of Minnesota	MB 1946	Miller Hospital, Saint Paul 2, Minn.
MILLER, John Regis	U. of Pittsburgh	MD 1942	Mayo Clinic, Rochester, Minn.
MILLS, Melvin Duane	Temple U.	MD 1941	Mayo Clinic, Rochester, Minn.
MUSSEY, William Clive	U. of Minnesota	MB 1946 MD 1946	1031 10th St. S.W., Rochester, Minn.
NELSON, Loren Elmer	U. of Minnesota	MB 1946	Johns Hopkins Hospital, Baltimore 5, Md.
NEWBERRY, Truman Albert	U. of Minnesota	MB 1947	University of Michigan Hospital, Department of Surgery, Ann Arbor, Mich.
NORDIN, Charles Anton	U. of Minnesota	MB 1946 MD 1947	3313 University, Des Moines, Ia.
PAINE, Roy Joseph	McGill	MD 1940	Mayo Clinic, Rochester, Minn.
PEDERSEN, Robert Lundberg	U. of Minnesota	MB 1946 MD 1946	42 Meadow Lane, Tyrol Hills, Minneapolis, Minn.
PRIDGEN, James Edward	Tulane U.	MD 1943	Mayo Clinic, Rochester, Minn.
RAMES, Eugene Duston	Harvard	MD 1946	Student Health Sevice, University of Minnesota, Minneapolis, Minn.
SCHAEFER, JR., Robt. Lawrence	St. Louis U.	MD 1944	1204 Kales Bldg., Detroit, Mich.
SCHOCH, JR., Eugene Paul	U. of Texas	MD 1946	345 Med. Arts Bldg., Minneapolis, Minn.
SHAPIRO, Sidney Keith	U. of West. Ontario	MD 1943	University of Minnesota Hospital, Department of Neurology, Minneapolis 14 Minn.
SINCLAIR, William James	U. of Manitoba	MD 1943	622 7th Ave. S.E., Minneapolis, Minn.
STRANDJORD, Nels Magne	U. of Chicago	MD 1946	325 Warwick Ave., Oakland 10, Cal.
SUSSMAN, Arthur Howard	U. of West. Ontario	MD 1944	2800 Cedar Ave., Minneapolis, Minn.
WALSH, John Francis	Marquette	MD 1946	Olivia, Minn.
WATSON, Wm. Henry Angus	U. of Minnesota	MB 1946	2014 N. Emerson, Minneapolis, Minn.
WORDEN, Ralph Edwin	U. of Nebraska	MD 1944	Mayo Clinic, Rochester, Minn.
Reciprocity Candidates			
BARNO, Alex	U. of Oklahoma	MD 1944	3759 Washburn Ave. No., Minneapolis, Minn.
CHAPMAN, Carrie Ethelyn	Tufts College Med.	MD 1934	Mayo Clinic, Rochester, Minn.
DeLAMATER, Edward Doane	Columbia U. Col. of Phys. and Surg.	MD 1942	Mayo Clinic, Rochester, Minn.
HOLMAN, Colin Baker	U. of Pennsylvania	MD 1943	Mayo Clinic, Rochester, Minn.
HOWELL, Roger William	U. of Michigan	MD 1938	University Hospital, Minneapolis 14, Minn.
LOWY, JR., Alexander D.	U. of Pittsburgh	MD 1944	Mayo Clinic, Rochester, Minn.
MEDWICK, Joseph Xavior	Temple U.	MD 1941	Mayo Clinic, Rochester, Minn.
RICHARDSON, JR., Edward Jones	Johns-Hopkins	MD 1943	Ancker Hospital, Saint Paul, Minn.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Name	*School*		*Address*
ROEMMICH, William	U. of Colorado	MD 1945	Minneapolis Department of Health, 240 S. 4th St., Minneapolis 1, Minn.
RUCHIE, Warren Henry	St. Louis U.	MD 1946	1765 East Ave., Saint Paul 9, Minn.
SCHMITZ, Glenn Peter	St. Louis U.	MD 1944	Holdingford, Minn.
STAUFFER, Herbert Milton	Temple U.	MD 1939	University of Minnesota Medical School, Dept. Radiology, Minneapolis 14, Minn.
SWANSON, Robert Frank	Northwestern	MB 1942 MD 1943	1501 W. 6th St., Racine, Wis.
TAYLOR, Bowen Eacritt	U. of Nebraska	MD 1943	Mayo Clinic, Rochester, Minn.
UNDERWOOD, Laurence Joseph	U. of S. California	MD 1942	Mayo Clinic, Rochester, Minn.
VRTISKA, Frank Leonard	U. of Nebraska	MD 1944	101 7th Ave. S., St. Cloud, Minn.

National Board Candidates

BORDEN, Craig Warren	Harvard	MD 1941	Veterans Administration Hospital, Minneapolis 17, Minn.
BORGE, Henry J.	Northwestern	MB 1941 MD 1942	211 E. 2nd St., Hastings, Minn.
CHAPMAN, Carleton Burke	Harvard	MD 1941	Laboratory Physiological Hygiene, So. Stadium Tower, Minneapolis 14, Minn.
JOHNSON, Hugh Albert	Northwestern	MB 1943 MD 1943	Mayo Clinic, Rochester, Minn.
MC MANUS, William Flynn	Loyola U.	MD 1939	Princeton, Minn.
MESSINGER, Roy Franklin	Col. of Med. Evan.	MD 1936	5000 Lankershim Blvd., North Hollywood, Calif.
PALAZZO, Frank	St. Louis U.	MD 1943	Mayo Clinic, Rochester, Minn.
PARKINSON, Dwight	McGill	MD 1941	Mayo Clinic, Rochester, Minn.
SPENCER, John Robert	Harvard	MD 1943	Mayo Clinic, Rochester, Minn.
STORRS, Richard Paul	Columbia	MD 1942	Mayo Clinic, Rochester, Minn.
TOBIN, John Dudley	Yale U.	MD 1939	301 Kenwood Parkway, Minneapolis, Minn.
WESSEL, Morris Arthur	Yale U.	MD 1943	Mayo Clinic, Rochester, Minn.
WOOD, Robert Allan	U. of Minnesota	MD 1945	701 Phys. & Surg. Bldg., Minneapolis 2, Minn.

PHYSICIAN LICENSED MAY 29, 1947, BY SPECIAL RECIPROCITY

April Examination

Name	*School*		*Address*
EUSTERMANN, John Joseph	Creighton U.	MD 1943	Mankato Clinic, Mankato, Minn.

PHYSICIANS LICENSED JULY 11, 1947

June Examination

Name	*School*		*Address*
ALLEN, Horace Ethan	U. of Michigan	MD 1940	Mayo Clinic, Rochester, Minn.
BETTS, Richard Arthur	Harvard U.	MD 1943	Mayo Clinic, Rochester, Minn.
BRADY, Joseph Augustine	U. of Pennsylvania	MD 1943	Mayo Clinic, Rochester, Minn.
CALLAGHAN, Mary Frances	U. of Kansas	MD 1944	416 Vancouver Block, Vancouver, Can.
COSGRIFF, James Arthur, Jr.	U. of Minnesota	MB 1946 MD 1946	Olivia, Minn.
CRUDO, Vincent Dominick	Marquette U.	MD 1946	Bethesda Hospital, Saint Paul, Minn.
FORTIER, Rene George	U. of Minnesota	MB 1942 MD 1943	Marble, Minn.
GEORGE, Robert Preston	Northwestern U.	MB 1943 MD 1944	Akron City Hospital, Akron, Ohio
GIBBONS, Thomas Bernard	U. of Minnesota	MB 1946	64 Commonwealth, Boston, Mass.
GRIFFITH, Eugene Russel	Northwestern U.	MB 1943 MD 1943	Mayo Clinic, Rochester, Minn.
HANLON, David Gregory	Jefferson Med. Col.	MD 1942	Mayo Clinic, Rochester, Minn.
HARVARD, Bell Marvin, Jr.	Tulane U.	MD 1939	Mayo Clinic, Rochester, Minn.
HETHERINGTON, John Arthur	Indiana U.	MD 1943	Mayo Clinic, Rochester, Minn.
HODAPP, Robert Vinton	U. of Minnesota	MB 1946 MD 1946	836 Ella Ave., Willmar, Minn.
JARRETT, Paul Stuart	Indiana U.	MD 1945	Mayo Clinic, Rochester, Minn
KLEIN, William A.	U. of Minnesota	MB 1935 MD 1936	704 Med. Arts Bldg., Duluth, Minn.
KOODA, Jennings C.	U. of Minnesota	MB 1946 MD 1946	Eagle Bend, Minn.
LOUISELL, James Michael	U. of Minnesota	MB 1944 MD 1945	14301 Glastonbury Road, Detroit 23, Mich.
LUTHER, Gertrude Catherine	U. of Wisconsin	MD 1944	Mayo Clinic, Rochester, Minn.
MURPHY, Maurice Hardy	Baylor U.	MD 1943	Mayo Clinic, Rochester, Minn.
PAAL, Dwain John	Marquette U.	MD 1946	St. Mary's Hospital, 2500 S. 6th St., Minneapolis, Minn.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Name	*School*		*Address*
PROUGH, Wendell Arthur	Indiana U.	MD 1942	Mayo Clinic, Rochester, Minn.
REIFEL, Albert Devine	U. of Minnesota	MB 1947	St. Luke's Hospital, Denver, Colo.
ROLLIE, Orris Oliver	U. of Illinois	MD 1946	1106 Summit Ave., Saint Paul 5, Minn.
ROUTLEY, Eric Francis	U. of Toronto	MD 1943	Mayo Clinic, Rochester, Minn.
SCHNEIDER, Edward Paul	St. Louis U.	MD 1942	Mayo Clinic, Rochester, Minn.
STILLWELL, George Keith	Queen's U.	MD 1942	c/o W. 300 University Hospital, Minneapolis, Minn.
TOBIN, John Robert, Jr.	U. Chicago-Rush	MD 1942	Mayo Clinic, Rochester, Minn.
THOM, John Girdwood	Georgetown U.	MD 1944	Mayo Clinic, Rochester, Minn.
THOMAS, Walton Dowdell	P. & S. Columbia	MD 1944	Mayo Clinic, Rochester, Minn.
UHLER, Walter Miller	Jefferson Med. Col.	MD 1943	Mayo Clinic, Rochester, Minn.
Reciprocity Candidates			
BARNES, Ben Cooke	U. of Pennsylvania	MD 1938	Mayo Clinic, Rochester, Minn.
CARTER, Herschel Gray	U. of Oklahoma	MD 1943	1829 Med. Arts Bldg., Minneapolis, Minn.
CLARKE, James Yandes, Jr.	U. of Minnesota	MB 1941 MD 1941	St. Joseph's Hospital, Saint Paul, Minn.
COLE, John Robert	St. Louis U.	MD 1943	213 Grand Ave. Bank Bldg., Saint Paul, Minn.
EISENMAN, Walter	U. of Michigan	MD 1944	Mesaba Clinic, Coleraine, Minn.
GULLORD, Edward George	Harvard U.	MD 1933	751 Med. Arts Bldg., Minneapolis, Minn.
KING, Nancy Burfoot	Med. Col. of Virginia	MD 1945	Mayo Clinic, Rochester, Minn.
KLEFSTAD, Lloyd Henry	Western Reserve	MD 1943	Greenbush, Minnesota
LAMONT, Charles Sloan	Georgetown U.	MD 1938	Mayo Clinic, Rochester, Minn.
PHILLIPS, Frederick E.	Wayne U.	MD 1946	Mora, Minn.
SCHMIDT, Hilmar Reinhold	Long Is. Col. of Med.	MD 1931	Winona General Hospital, Winona, Minn.
WILLIAMSON, Harold Allen	Western Reserve	MD 1941	Heron Lake, Minn.
WOOD, George Oviatt	Vanderbilt U.	MD 1938	Mayo Clinic, Rochester, Minn.
ZEIGLER, Charles McClellan Iseman	Temple U.	MD 1944	Pequot Lakes, Minn.
National Board Candidates			
HOWELL, Carter Wyckoff	Duke U.	MD 1943	Veterans Hospital, Minneapolis, Minn.
LOGAN, Arch Hodge, Jr.	U. of Chicago, Rush	MD 1942	Mayo Clinic, Rochester, Minn.
PAINTER, Robert Clayworth	U. of Chicago, Div. Biol. Sc.	MD 1941	Mayo Clinic, Rochester, Minn.
ROBERTS, Norbert J.	U. of Buffalo	MD 1940	Mayo Clinic, Rochester, Minn.
WILLIAMS, Charles Francis	U. of Chicago	MD 1942	University Hospital, Minneapolis 14, Minn.
WURDEMANN, Alma Louise	U. of Iowa	MD 1946	White Bear Lake, Minn.

PHYSICIAN LICENSED AUGUST 23, 1947, BY SPECIAL RECIPROCITY

June Examination

Name	*School*		*Address*
WOODS, Emile Bryant	St. Louis U.	MD 1927	Comm. Health Assn., Two Harbors, Minn.

PHYSICIANS LICENSED NOVEMBER 7, 1947

September Examination

Name	*School*		*Address*
ALBERS, Donald Dean	Northwestern U.	MB 1943 MD 1943	Mayo Clinic, Rochester, Minn.
ANDERSON, JR., Frank Joseph	U. of Minnesota	MB 1947	Swedish Hospital, Minneapolis, Minn.
BERENSON, Sheldon Ellis	U. of Minnesota	MB 1946	1809 Penn Ave. No., Minneapolis, Minn.
BILKA, Paul Joseph	Columbia Col. of Phys. and Surg.	MD 1943	Mayo Clinic, Rochester, Minn.
BOCK, William Ward	U. of Minnesota	MB 1947	1123 4th Ave. N. W., Rochester, Minn.
BORGESON, Harry Park	U. of Minnesota	MB 1947	Chisholm, Minn.
BOUTHILET, Florence Jacqueline	U. of Minnesota	MB 1947	1555 Fairmount Ave., Saint Paul 5, Minn.
BUGGY, William John	U. of Minnesota	MB 1947	Milwaukee Co. Hospital, Milwaukee, Wis.
BURICH, Harry Frank	U. of Minnesota	MB 1947	Minneapolis General Hospital, Minneapolis 15, Minn.
BUSSMAN, John Wood	U. of Minnesota	MB 1947	Sioux Valley Hospital, Sioux Falls, S. D.
CAMPBELL, John Braxton Siebern	U. of Pennsylvania	MD 1942	626 Broadway, Cincinnati 2, Ohio
CEDARLEAF, Cherry Blossom	U. of Minnesota	MB 1947	Waterbury Hospital, Waterbury, Conn.
COTTER, Anne Kathryn	U. of Minnesota	MB 1947	Woman's Hospital, Detroit, Mich.
DAEHLIN, Rolf	U. of Minnesota	MB 1946	106 Union Ave. S., Fergus Falls, Minn.
DIEHL, Antoni Mills	U. of Minnesota	MB 1947	University of Michigan Hospital, Ann Arbor, Mich.
ENGELS, Edward Patrick	U. of Minnesota	MB 1947	Indianapolis General Hospital, Indianapolis, Ind.
FEIGAL, David William	U. of Minnesota	MB 1947	Ancker Hospital, Saint Paul, Minn.
FIDELMAN, Norman Edward	U. of Minnesota	MB 1947	Milwaukee Co. Hospital, Milwaukee, Wis.
FLINN, James Brainerd	U. of Minnesota	MB 1947	208 E. 3rd St., Redwood Falls, Minn.

Name	*School*		*Address*
GALLAGHER, William Bernard	U. of Minnesota	MB 1947	500 N. State St., Waseca, Minn.
GOMSI, Edwin Samuel	U. of Minnesota	MB 1947	R. 1, Box 252, Eveleth, Minn.
GORDON, George Benjamin	U. of Minnesota	MB 1946	3500 Dupont Ave. S., Minneapolis, Minn.
GORDON, Jack	U. of Minnesota	MB 1943 MD 1944	119 Anat. Bldg., University of Minnesota, Minneapolis 14, Minn.
GULL, Reuben	U. of Minnesota	MB 1947	Orange County General Hospital, Orange, Cal.
GUMPRECHT, Donald Max	U. of Minnesota	MB 1946 MD 1947	514 S. 3rd St., Bozeman, Mont.
HANSEN, Rollin Montell	U. of Minnesota	MB 1947	4517 2nd Ave. S., Minneapolis, Minn.
HANSON, LeRoy William	U. of Minnesota	MB 1947	Minneapolis General Hospital, Minneapolis 15, Minn.
HARRINGTON, JR., Vernon Ashcraft	U. of Minnesota	MB 1947	St. Mary's Hospital, Duluth, Minn.
HAUSER, Paul John	U. of Minnesota	MB 1947	303 E. Superior St., Chicago, Ill.
HOSETH, Wayne Loren	U. of Minnesota	MB 1947	Milwaukee County Hospital, Milwaukee, Wis.
JOHNSON, Kenneth Eugene	U. of Minnesota	MB 1946	114 6th Ave., Helena, Mont.
KIRBY, JR., Thomas Joseph	Southwestern Med. Col.	MD 1944	Mayo Clinic, Rochester, Minn.
KLEIN, Morris	U. of Minnesota	MB 1947	2600 Plymouth Ave. N., Minneapolis, Minn.
KUDISH, Harold Gordon	U. of Minnesota	MB 1946 MD 1946	3451 Douglas Blvd., Chicago 23, Ill.
LARSON, Donald Myhren	U. of Minnesota	MB 1946	22 Park Lane, Minneapolis, Minn.
LILLEHEI, James Perry	U. of Minnesota	MB 1947	4601 Wooddale Ave. S., Minneapolis, Minn.
LIPSCHULTZ, Carl Edward	U. of Minnesota	MB 1947	2122 Hartford Ave., Saint Paul 5, Minn.
LUNDBLAD, Wilfred Milton	U. of Minnesota	MB 1947	3827 S. Zenith, Minneapolis 10, Minn.
MARTIN, Doreen Aprilla	U. of Minnesota	MB 1947	Grace Hospital, Detroit, Mich.
MELANDER, JR., Leonard	U. of Minnesota	MB 1947	1439 Hythe St., Saint Paul, Minn.
NELSON, William Calkins	U. of Minnesota	MB 1947	Amery, Wisconsin
OLSEN, Jack Gordon	U. of Minnesota	MB 1947	Swedish Hospital, Minneapolis, Minn.
OWENS, JR., Benjamin Peter Michael	U. of Minnesota	MB 1947	1102 E. Howard St., Hibbing, Minn.
PACIOTTI, Vincent James	U. of Minnesota	MB 1947	Box 508, Virginia, Minn.
ROSENBAUM, David Lawrence	U. of Minnesota	MB 1947	704 Delaware Ave., S. E., Minneapolis, Minn.
ROSSING, Robert Grangaard	U. of Minnesota	MB 1947	Sacred Heart, Minnesota
SCANDALIS, Paul Richard	U. of California	MB 1940	Mayo Clinic, Rochester, Minn.
SCHNEIDMAN, Harold M.	U. of Minnesota	MB 1947	University of Oklahoma Hospitals, Oklahoma City , Okla.
SHULDBERG, Arthur Bernard	U. of Minnesota	MB 1947	1307 N. Vincent Ave., Minneapolis 11, Minn.
SPANJERS, Arnold Joseph	U. of Minnesota	MB 1947	R. R. 2, Box 385, Excelsior, Minn.
STRANSKY, John Joseph	U. of Minnesota	MB 1947	612 E. Elm St., Owatonna, Minn.
STURGES, Robert Leon	U. of Minnesota	MB 1947	3441 Third Ave. S., Minneapolis, Minn.
TATKIN, Sylvan Oscar	U. of Minnesota	MB 1947	Marine Hosp., United States Public Health Service, Seattle, Wash.
TREGILGAS, Richard Boland	U. of Minnesota	MB 1947	Minneapolis General Hospital, Minneapolis 15, Minn.
VERBY, JR., John Edward	U. of Minnesota	MB 1947	Minneapolis General Hospital, Minneapolis 15, Minn.
VON DRASHEK, Stanley Carl	U. of Minnesota	MB 1947	209 5th Ave. W., Dickinson, N. D.
WATKINS, John Arthur	U. of Minnesota	MB 1947	Wm. J. Seymour Hospital, Eloise, Mich.
WEIL, JR., William Bachrach	U. of Minnesota	MB 1947	Minneapolis General Hospital, Minneapolis 15, Minn.
WEIR, Matthew Just	U. of Minnesota	MB 1947	4548 Garfield, Minneapolis 9, Minn.
WEYHRAUCH, Robert A.	U. of Minnesota	MB 1947	Minneapolis General Hospital, Minneapolis 15, Minn.
WHEELER, Robert William	U. of Minnesota	MB 1940 MD 1941	Veterans Hospital, Minneapolis, Minn.
WHITAKER, JR., John Louis	U. of Minnesota	MB 1947	1903 N. 82nd St., Seattle 3, Wash.
WICHELMAN, Delbert Frederick	U. of Minnesota	MB 1947	Gibbon, Minn.
YLITALO, William Henry	U. of Minnesota	MB 1945 MD 1946	2013 8th Ave. E., Hibbing, Minn.
YLVISAKER, John Richard	U. of Minnesota	MB 1947	Swanville, Minn.
ZUCKER, Martin L.	U. of Minnesota	MB 1947	802 Marshall Ave., Saint Paul, Minn.

Reciprocity Candidates

BAILEY, JR., John Holeman	U. of Pennsylvania	MD 1943	Mayo Clinic, Rochester, Minn.
DEDERICK, JR., Gerald Fisk	Med. Col. of Virginia	MD 1942	Mayo Clinic, Rochester, Minn.
ELLIOTT, JR., Joseph Alexander	U. of Michigan	MD 1944	Mayo Clinic, Rochester, Minn.
LONG, John Wade	Tulane U.	MD 1941	Mayo Clinic, Rochester, Minn.
SHRONTS, John Frank	Northwestern	MB 1935 MD 1936	General Mills Bldg., 400 2nd Ave. S., Minneapolis, Minn.
SLOAN, JR., Wyman Platt	Tulane U.	MD 1944	Mayo Clinic, Rochester, Minn.
TERRY, William Sanford	Med. Col. of Virginia	MD 1944	University of Minnesota Hospital, Department of Medicine, Minneapolis 14, Minn.
YEAKEL, JR., Earl Leroy	U. of Oklahoma	MD 1943	Mayo Clinic, Rochester, Minn.

PHYSICIANS LICENSED NOVEMBER 7, 1947

October Examination

Name	*School*		*Address*
BALLINGER, Carter Mitchell	U. of Iowa	MD 1945	Veterans Administration Hospital, St. Cloud, Minn.
BANK, Edward William	Northwestern U.	MB 1941 MD 1942	401 Med. Arts Bldg., Minneapolis 2, Minn.
BARRINGER, Phil Louis	Jefferson Med. Col.	MD 1942	Mayo Clinic, Rochester, Minn.
BAUER, Edward Gregory	U. of Minnesota	MB 1947	1221 Fifth St. S. E., Minneapolis, Minn.
BECK, JR., Wilford William	U. of Pennsylvania	MD 1934	Mayo Clinic, Rochester, Minn.
BEELER, John Watson	U. of Indiana	MD 1944	Mayo Clinic, Rochester, Minn.
BOFENKAMP, Benjamin	U. of Minnesota	MB 1943 MD 1943	University of Minnesota Medical School, Minneapolis 14, Minn.
BUTLER, Donald Bertrand	Northwestern U.	MB 1944 MD 1944	Mayo Clinic, Rochester, Minn.
CAMERON, Bruce Molloy	U. of Texas	MD 1944	Mayo Clinic, Rochester, Minn.
CORCORAN, JR., Charles Edward	Loyola U.	MD 1944	Mayo Clinic, Rochester, Minn.
CUSHING, Robert Louis	Creighton U.	MD 1939	503 Wash. Ave., Brainerd, Minn.
FLAUTT, JR., James Robert	U. of Tennessee	MD 1944	Mayo Clinic, Rochester, Minn.
FROKE, Leo Burton	Bowman Gray, N. C.	MD 1945	Veterans Hospital, St. Coud, Minn.
HALL, Barnard	U. of Oregon	MD 1942	90 Malcolm Ave. S.E., Minneapolis, Minn.
HAMEL, Joseph Ignatius	Marquette U.	MD 1946	St. Mary's Hospital, Minneapolis, Minn.
HARRIS, Lloyd Edwin	Rush U., Chicago	MD 1937	Mayo Clinic, Rochester, Minn.
HAYLES, Alvin Beasley	Wash. U., St. Louis	MD 1941	Mayo Clinic, Rochester, Minn.
KLEIN, Daniel William	U. of Minnesota	MB 1943 MD 1944	Preston, Minn.
LANG, Carl Millard	U. of Virginia	MD 1943	Mayo Clinic, Rochester, Minn.
LEWIS, Asle Kingsley	U. of Illinois	MD 1944	Dakota Clinic, 702 1st Ave. S., Fargo No. Dak.
LILLIE, Walter Irving	U. of Michigan	MD 1941	Mayo Clinic, Rochester, Minn.
MARSHALL, Thomas Milton	U. of Louisville, Ky.	MD 1941	Mayo Clinic, Rochester, Minn.
MESERVE, Francis Bruce	U. of Minnesota	MB 1945 MD 1946	207 Troup St., Bowling Green, Ohio
MILBURN, Graham Burton	U. of Pennsylvania	MD 1942	Mayo Clinic, Rochester, Minn.
NELSON, Luther Arnold	U. of Minnesota	MB 1947	Bethesda Hospital, Saint Paul, Minn.
O'LOUGHLIN, Bernard James	Creighton U.	MD 1942	Veterans Hospital, Minneapolis, Minn.
PETERSON, Clifton Robert	U. of Minnesota	MB 1947	2617 Clinton Ave. So., Minneapolis, Minn.
PICK, James William	Northwestern U.	MB 1940 MD 1941	Mayo Clinic, Rochester, Minn.
PIERCE, Robert B.	U. of Minnesota	MB 1943 MD 1944	Wadena Clinic, Wadena, Minn.
RATHKEY, Arthur Stanley	U. of Oregon	MD 1947	Minneapolis General Hospital, Minneapolis Minn.
REYNOLDS, John Lucien	Stanford	MD 1941	Mayo Clinic, Rochester, Minn.
RICE, Frank Blair	U. of Minnesota	MB 1947	St. Mary's Hospital, Minneapolis, Minn.
ROBINETT, Robert William	Western Reserve	MD 1943	230 Oak Grove St., Minneapolis 4, Minn.
ROBINSON, Stuart Cooper	U. of Toronto	MD 1944	Box 45, Creighton Mine, Ontario, Can.
SETTIMI, Albino Luciano	U. of Minnesota	MB 1947	Milwaukee County Hospital, Milwaukee, Wis.
SHOOK, Lester Dale	U. of Illinois	MD 1947	1012 Thomas Ave., Saint Paul 4, Minn.
SMERSH, JR., Jerome Francis	U. of Minnesota	MB 1947	Milwaukee County Hospital, Milwaukee, Wis.
SMITH, Don Vernon	Northwestern U.	MB 1943 MD 1944	Eitel Hospital, 14th and Willow, Minneapolis, Minn.
STAUB, Henry Paul	U. of Illinois	MD 1947	Minneapolis General Hospital, Minneapolis, Minn.
STUEN, Marcus Rodway	Marquette U.	MD 1946	Parkland, Wash.
SUTHERLAND, Walter Hugh	Col. of Med. Evang.	MD 1945	104 14 St. N., Benson, Minn.
TAM, Ernest Chun-seck	U. of Minnesota	MB 1947	Milwaukee County Hospital, Milwaukee, Wis.
TATUM, Donald Edward	U. of Oregon	MD 1947	St. Joseph's Hospital, Saint Paul, Minn.
TEBERG, Mary Hilbert	U. of Minnesota	MB 1947	Minneapolis General Hospital, Minneapolis 15, Minn.
THORSON, Stuart Verne	U. of Minnesota	MB 1945 MD 1946	5036 39th Ave. S., Minneapolis, Minn.
TONDREAU, Roderick Louis	U. of Pennsylvania	MD 1940	Mayo Clinic, Rochester, Minn.
VIRNIG, Richard Peter	U. of Minnesota	MB 1941 MD 1942	Wells, Minn.
WALPOLE, Stewart Hewes	Northwestern U.	MB 1937 MD 1938	305 East Ave., Park Ridge, Ill.
WESOLOWSKI, Stanley P.	Loyola U.	MD 1943	University of Minnesota Hospital, Minneapolis 14, Minn.

Reciprocity Candidates

BLUNT, III, Charles Porter	Med. Col. of Virginia	MD 1943	Mayo Clinic, Rochester, Minn.
FRASER, Alexander Frank	N. Y. U. Med. Col.	MD 1940	Lynde Clinic, Thief River Falls, Minn.
HEISLER, John Joseph	Temple U.	MD 1946	2135 James Ave., Saint Paul 5, Minn.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Name	*School*		*Address*
HUGHES, Jack	U. of Pennsylvania	MD 1943	228 Lowry Med. Arts Bldg., Saint Paul 2, Minn.
KIRTLAND, JR., William Beebe	Wayne U.	MB 1942 MD 1943	Lenont-Peterson Clinic, 401 1st St. S., Virginia, Minn.
LIMBACHER, Henry Phillip	Ohio State U.	MD 1938	Cleveland State Hospital, Cleveland, Ohio
MAINO, Vernon Joseph	Stanford U.	MD 1943	Mayo Clinic, Rochester, Minn.
McCORKLE, James Kenneth	McGill U., Montreal	MD 1940	Mayo Clinic, Rochester, Minn.
MOORE, Irvin Harlow	U. of Iowa	MD 1939	148 Summit Ave., Saint Paul, Minn.
MORRIS, Charles Rudolph	U. of Wisconsin	MD 1941	Mayo Clinic, Rochester, Minn.
MUEHLIG, Wilbur Andrew	U. of Michigan	MD 1935	Medical Arts Bldg., Omaha, Nebr.
NICHOLS, Dean	Yale U.	MD 1942	Suite 1, Gold Block, Helena, Mont.
NOGUCHI, Sugi	U. of Colorado	MD 1943	Carleton College, Northfield, Minn.
ReMINE, JR., William Hervey	Med. Col. of Virginia	MD 1943	Mayo Clinic, Rochester, Minn.
SAYLOR, JR., Howard LeRoy	Northwestern U.	MB 1943 MD 1943	Mayo Clinic, Rochester, Minn.
SPAULDING, JR., Clarence Arthur	Stanford U.	MD 1943	Mayo Foundation, Rochester, Minn.
WALDER, Harold J.	New York Med. Col.	MD 1939	Duluth Clinic, Duluth, Minn.
WYNSEN, Henry James	Loyola U.	MD 1941	531 S. Clover St., Fremont, Ohio
YOUNGSTROM, Clarence Swan	U. of Nebraska	MD 1938	Ortonville, Minn.

National Board Candidates

BARRETT, John Lee	Duke U.	MD 1943	6941 Sheridan Ave., Minneapolis, Minn.
COMLY, Hunter Hall	Yale U.	MD 1943	University of Minnesota, Department of Pediatrics, Minneapolis 14, Minn.
MAY, Charles Davidson	Harvard U.	MD 1936	University of Minnesota Hospital, Minneapolis 14, Minn.
OLSON, Lillian Agnes	U. of Minnesota	MB 1935 MD 1936	State Sanatorium, Ah-gwah-ching, Minn.
RYDELL, John Robert	Harvard U.	MD 1943	Mayo Clinic, Rochester, Minn.
TUCKER, William Boose	U. of Chicago	MD 1934	3612 46 Ave. So., Minneapolis, Minn.
WEBER, Lowell Wyckoff	U. of Illinois	MD 1946	Havana, North Dakota
WOLFF, Helen Berman	Stanford U.	MD 1947	109 Lake Ave., Worthington, Minn.

Former Minneapolis Abortionist Sentenced to Two Years in Federal Prison

(Continued from Page 403)

on which date Beckman entered a plea of guilty to an information charging him with the crime of abortion.

At the time Beckman pleaded guilty to abortion in the District Court of Hennepin County, he was on probation in the United States District Court because of his failure to report for induction into the United States Army. That probation was imposed by Judge Joyce, on October 13, 1942, on which date Beckman was sentenced to a term of three years in a penitentiary type institution for violating the Selective Service Act. On the same date Judge Joyce suspended for five years the imposition of sentence on Beckman for a second indictment charging him with failure to report for induction into the United States Army. Beckman served part of the three-year sentence at Leavenworth, Kansas, and Sandstone, Minnesota. He was released on parole December 14, 1944, so that he could join the United States Army. Beckman remained in the Army but a short period of time and received a medical discharge. Since then he has been receiving a pension of $69.00 a month from the Government for his army service following a claim of a heart ailment. Beckman violated his probation in Federal Court by being convicted of the abortion charge in November, 1945. No action was taken by the Court on revoking Beckman's probation until he served his full sentence on the abortion charge.

On March 16, 1948, when Judge Joyce revoked Beckman's probation, the Court told Beckman that engaging in the abortion racket was "one of the rottenest lines that a man could engage in." In reviewing Beckman's long criminal record dating back to 1931, when he was arrested for stealing from a Minneapolis department store, Judge Joyce stated that "not one single item of proof that there is any good in this man" had been offered to the Court. Beckman never was licensed to practice any form of healing in the State of Minnesota.

Minneapolis Surgical Society

Meeting of December 4, 1947

Dr. L. Haynes Fowler, Presiding

VAGOTOMY IN THE TREATMENT OF IDIOPATHIC ULCERATIVE COLITIS AND REGIONAL ENTERITIS

CLARENCE DENNIS, M.D., FRANK D. EDDY, M.D., and DARRELL WESTOVER, M.D.
Minneapolis, Minnesota

(This paper was published in the March, 1948, issue of MINNESOTA MEDICINE, page 253.)

CONGENITAL CYSTS AND FISTULAS OF THE NECK
With Case Reports

WILLIAM H. RUCKER, M.D., F.A.C.S.
Minneapolis, Minnesota

Congenital cysts and fistulas of the neck are interesting surgical problems. A knowledge of the embryology and anatomy of the cervical region is necessary for their recognition as well as the delicate dissections required for their adequate removal. This treatise concerns itself with a discussion of a number of these anomalies and the reporting of one case of each type.

Thyroglossal Duct Cysts and Fistulas

The thyroglossal cyst has its origin in a duct which arises at the foramen cecum in the embryo, passes down through the base of the tongue, over, through, or under the hyoid bone, and into the neck to form the isthmus of the thyroid gland. When this duct does not become obliterated, a cyst may result from the secretion of its epithelial lining. Commonly this occurs below the hyoid bone, but at times above it, and in a few cases just below the foramen cecum.

One is usually consulted by a young person who wishes a lump removed from the neck for cosmetic reasons. On examination, a round or ovoid cystic feeling tumor, ordinarily about the size of a walnut, is found just inferior to the hyoid bone in the mid-line, or occasionally to one side. There is no tenderness unless inflammation is present, which is uncommon unless aspiration or incision has superimposed infection. Less often, a cyst is seen above the hyoid bone, which is frequently larger and appears as a soft tumor in the mid-line beneath the chin, at times protruding into the floor of the mouth, but producing few symptoms. On rare occasions, a cyst may bulge the tongue in the region of the foramen cecum and interfere with deglutition and respiration.

The differential diagnosis of these lesions is ordinarily not difficult, but epidermoids, branchial cysts, thyroid cysts, and aberrant thyroids must be considered. Epidermoids are attached intimately to the skin and do not move with deglutition. The relationship of branchial cysts to the sternomastoid muscle should distinguish them, as thyroglossal duct cysts rarely extend to this muscle. Thyroid cysts are connected commonly with the thyroid gland, but aberrant thyroid tissue may be located anywhere along the course of the thyroglossal tract and may be impossible to differentiate. Infection may confuse the diagnosis.

Thyroglossal duct cysts are freely moveable beneath the prethyroid muscles except at their base where the duct passes to the hyoid bone. They are smooth walled and contain a mucoid material, unless infected, when granulation tissue and pus may be present. They may be lined with flat or cuboidal epithelium, and papillary projections may be found. Many times no epithelium is seen.

Thyroglossal duct fistulas practically all occur as a result of infected thyroglossal cysts and the procedures incident to their treatment. In rare cases they are present from birth and appear as small openings in the midline of the neck below the cricoid cartilage, discharging intermittently or continuously a mucoid or purulent material. They are lined with squamous epithelium.

Total excision is the only satisfactory treatment for these cysts and fistulas. They will recur if portions of the cyst wall, duct, or diverticuli from the duct have not been removed. The procedure reported by Sistrunk[14 15] in 1920 has been uniformly successful. This operation consists in dissecting free the cyst to its base, excising a portion of the hyoid bone, and the tract *en bloc* in a 45 degree angle to the base of the tongue.

Case Report

A fourteen-year-old boy was admitted to the hospital January 8, 1939, for the removal of a tumor which had been present on his neck for three months. He stated he had first noticed the lump in the fall of 1938 and that it had gradually increased in size. It had caused him no discomfort, but he wished it removed because "it looked bad."

Physical examination revealed a rather tense cystic-feeling tumor, about the size of a walnut, on the left side of his neck over the cornu of the hyoid bone. The skin was freely moveable over it, and it moved up and down as the patient swallowed. There was no tenderness nor other evidence of infection.

A diagnosis of thyroglossal cyst was made and operation performed on January 9, 1939. The Sistrunk operation was used. An uneventful recovery took place, and there has been no recurrence.

The report of the pathologist revealed a 2-centimeter cyst filled with mucus. Microscopically a fibrous wall was found with no apparent epithelial lining, but lymphocytes and pus cells infiltrated the wall and at one point an irregular gland lined with epithelium was found.

Branchial Cysts

The origin of branchial cysts and fistulas is still controversial. In 1832, Ascherson[3] suggested that they probably arose from the branchial apparatus, and in the late 1800's through the writings of Heusinger and Senn,[9] they became known as branchial cysts and fistulas. However, Wenglowski[19] in 1912, after the study of seventy-five embryos and five years' work, asserted that these lesions did not arise directly from the branchial clefts but from the primordium of the thymus. He stated that the branchial clefts were only involved in the development of the head and upper neck and that they could have nothing to do with any defect below the hyoid bone. He concluded that these cysts and fistulas arise from the thymic ducts which have their origin in the third branchial pouch. In 1932, Meyer[12] reviewed Wenglowski's work and agreed with him. Nevertheless, many prominent authors are satisfied with the concept of their branchiogenic origin. They argue that the course of the branchial fistula is incompatible with the route of the thymo-pharyngeal duct—the fistula passing anterior to the hypoglossal nerve and between the external and internal carotid arteries, and the duct passing posterior to the internal carotid and inferior to the nerve[11]—that none of these anomalies have ever been found in the mediastinum in the region of the thymus;[7] that cartilagenous auricles occur in the lower neck and are undoubtedly remnants from the branchial apparatus;[4,15] and that at two months in the embryo the branchial apparatus has disappeared, so that it cannot be definitely stated that the hyoid bone marks its lower limits.[15]

Branchial cysts are deep-seated globular tumors which occur along the anterior margin of the sternomastoid muscle, usually under the angle of the jaw. They may bulge into the floor of the mouth, extend under the sternomastoid and even appear posterior, or continue along its anterior border and result in considerable enlargement of the neck. They are usually not evident until adult age, in spite of their congenital origin, and often become more prominent after an upper respiratory infection. They may occur on either side of the neck, usually grow slowly, unless infected or traumatized, and may be present for many years before medical advice is sought. These lesions may become spontaneously infected, but more often infection follows inadvertant incision. To palpation, they are smooth and cystic, or hard, depending upon their content, which may be either fluid or cheesy. They do not transilluminate, and unless inflammation has been present, they are moveable beneath the skin.

Branchial cysts must be differentiated from tuberculous lymph glands, cold abscesses, suppurating lymph glands, dermoid cysts, hygromas, aberrant thyroids, lipomas, hemangiomas, neurofibromas, metastatic nodes, aneurysms and carotid body tumors. Diagnosis can usually be made by a careful history, a thorough physicial examination, aspiration, and x-ray study. The history will often reveal points of diagnostic value. On physical examination, the relationship of the branchial cyst to the sternomastoid muscle, its nonadherency to the skin, its opaqueness to transillumination, and its tense cystic consistency with no pulsation will be distinguishing factors. Aspiration is a helpful differential procedure. Bailey[4] states that the presence of cholesterol crystals in the aspirated fluid will always demonstrate a branchial cyst. Wangensteen[18] reports the shimmer or yellowish sheen of the fluid in a basin is characteristic. Wangensteen also found that he could differentiate these cysts from tuberculous glands by x-raying them after the injection of an opaque material.

Bailey[4] classified branchial cysts into four types, using as a basis their relationship to other structures of the neck: Type I lying just below the cervical fascia at the anterior border of the sternomastoid, its center just opposite the great cornu of the hyoid bone; Type II, the most common, lying on the internal jugular vein; Type III extending between the internal and external carotid arteries towards the pharynx and at times even to the base of the skull; Type IV, the columnar lined cysts, lying in contact with the pharynx but giving rise to no symptoms.

Neel and Pemberton[13] state branchial cysts vary in size from 1 centimeter to more than 10 centimeters and that they have walls varying in thickness from 1 millimeter to 1 centimeter. They are ovoid or spherical shaped tumors, usually lined with squamous, but occasionally with columnar epithelium. Their content may be clear, milky or cheeselike, but it always contains cholesterol.

The treatment is surgical removal. Through a transverse incision, which follows a natural crease in the neck, the skin and platysma muscle are sectioned and pulled aside. The fascia is cut and the sternomastoid retracted, or incised if necessary. The cyst should not be ruptured. Bailey[4] advises partial aspiration and then grasping the wall with a sponge holder with gauze between the rings. Great care must be exercised as one proceeds, as these cysts are often adherent to the jugular and carotids, near the hypoglossal and glossopharyngeal nerves, and sometimes in contact with the pharynx in the tonsil area. All of the cyst wall must be removed or destroyed to prevent recurrence.

Case Report

On June 21, 1943, a negro, fifty-four years of age, was seen because of a mass on the left side of his neck—a growth that had been present for six weeks had gradually increased in size, but had caused no symptoms. He had had two x-ray treatments.

An ovoid tumor about the size of an egg was present at the anterior edge and under the left sternomastoid muscle, about an inch below the angle of the jaw. Palpation elicited a hard tumor adherent to surrounding tissue. There was a moderate redness and induration of the overlying skin from the x-ray therapy. The patient's temperature was normal and other findings were unimportant.

Operation was performed June 22. A transverse incision was made over the mass. It was found adherent to the sternomastoid muscle, making it necessary to split and dissect the muscle from the tumor's surface. It was also fused to the deeper structures and could not be removed intact. As it was opened, a milky purulent material exuded. The cyst wall was stripped away and the cavity cauterized with phenol. A drain was inserted and the wound was closed.

Sections of the cyst wall showed fibrous tissue with chronic inflammation and granulations infected with pus

Swabs of the contents taken at operation showed hemolytic streptococci.

The patient made an uneventful recovery and has had no recurrence to date.

Branchial Fistulas

Branchial fistulas may be present at birth or may occur as the result of incising a branchial cyst. Three types are found: the complete type, where the fistula has an internal opening in the pharynx and an external opening along the anterior border of the sternomastoid; the internal type, which opens in the pharynx; and the external type, which has only an external orifice. They are usually unilateral but may occur on both sides of the neck. When these fistulas arise from the first branchial cleft, their openings are on or near the ear, ordinarily incomplete, and causing no symptoms except slight intermittent drainage.

Branchial fistulas from the cervical sinus or thymic duct are practically always located in the lower third of the neck with their external opening along the anterior border of the sternomastoid muscle and their inner sinus in the posterior pillar of the tonsil. They are prone to excrete intermittently a mucoid fluid except when infection causes a purulent discharge. They are lined with squamous or cuboidal epithelium.

Diagnosis presents no problem. Treatment consists in removal of the complete tract when inflammation has subsided. X-ray after the injection of opaque media is valuable in demonstrating the course of the lesion. Yoerg[20] has discovered a helpful procedure which is adaptable to any fistulous tract and valuable here. If, following the injection of lipiodol, methylene blue is injected, a bluish-black substance is fixed in the fistulous wall and dissection is greatly facilitated. However, these tracts hold only a small amount of solution and one must be careful not to rupture them and force the dye into the surrounding tissues.

As vertical incisions in the neck often leave ugly scars, a transverse elliptical incision should be made about the fistulous opening, and the tract followed up over the prethyroid muscles and then deeply over the hypoglossal nerve and between the internal and external carotid arteries towards the pharynx. Dissection should be carried as far as safely possible and the stump ligated, excised, and cauterized. Von Hacker's or Koenig's methods of inverting the stump into the pharynx are probably not necessary, if the stump is short. Usually one incision in the skin, if widely retracted, will suffice, but if necessary, another steplike transverse incision may be made above and the dissection carried on from there.

Report of a Case with Bilateral Cervical Fistulas and an Auricular Sinus

History.—On July 9, 1947, a sixteen-year-old girl entered the hospital because of fistulas which had been present on either side of her neck since birth. The one on the right had intermittently swelled and discharged a creamy material. From the one on the left she noted in rare instances a drop or two of clear fluid, but no swelling or irritation. In front of her left ear a small opening had been noticed from birth but had caused her no concern.

Physical examination.—On the right side of the neck, 5 centimeters from the sternal notch, at the medial margin of the sternomastoid muscle, there was a small sinus from which could be expressed a whitish creamy material. There was no swelling, redness or evidence of inflammation. Along the medial border of the left sternomastoid muscle, 2.5 centimeters from the sternal notch, there was a small fistulous opening emitting no discharge and not infected. Just anterior to the helix of the left ear, there was a small nondraining sinus 1 centimeter in depth. Her tonsils had been removed. Internal fistulous openings could not be found in the posterior pillars. X-ray examination after injection of pantopaque revealed fistulas.

Operation.—On July 10, lipiodal and methylene blue were injected into the right fistulous tract. An elliptical incision was made about the opening, and the dye-stained tract was dissected up between the branches of the carotid artery to the tonsil area where it was ligated and excised. A small rubber drain was inserted, the wound closed and layers with clips adapting the skin margins. Healing was prompt and a fine linear scar resulted.

Pathological Report.—The specimen consisted of a branchial fistula removed intact. It was covered by skin and measured 6 by 1 centimeters. The fistulous tract was elongated and showed no definite cystic dilatation. It had been injected with methylene blue.

Operation.—On August 12, 1947, the fistulous tract on the left was removed in a similar manner. However, as it was located lower in the neck and hence was longer, another steplike incision above was necessitated for its complete removal. Recovery was rapid and the scar was good.

Pathological Report.—The specimen consisted of a portion of the skin from the neck, attached to which was an elongated portion of tissue stained with methylene blue, resembling a sinus tract. Microscopic sections of the sinus showed it to be lined by noncornified epithelium, surrounded by a few lymphocytes, muscle and connective tissue. There was no evidence of malignancy. Diagnosis: Branchial fistula of the neck.

Cystic Hygroma

Cystic hygromas are comparatively rare. Although Gross and Goeringer[8] reported twenty-seven cases in 1939, they could find only about 225 cases, including theirs, in the literature at that time.

These cystic tumors are of lymphoid origin and arise from the embryological jugular and subclavian lymph sacs, anlagen of the cervical lymphatic system. Normally these sacs send out branches which anastomose with other branches from similar sacs in the pelvic, abdominal, and thoracic regions, to form the lymphatic system. Sabin[14] believes the sacs are off-shoots of the venous system while Huntington[10] asserts they develop from mesenchymal tissues. Whatever their origin, there is general agreement that the hygroma arises from disconnected portions of these sacs which continue to grow by sending out endothelial cords between tissues of the neck, these cords later acquiring lumen which fill with lymphlike fluid. As the jugular sac extends from the jugular foramen to the subclavian region under the clavicle, the locations of these lesions can be explained.

Cystic hygromas are doughy spongy-feeling tumors that are often present at birth. In Gross and Goeringer's[8] cases, 90 per cent were noticed before the child

was two years of age. A few have been reported in adults. They usually occur in the supraclavicular space, where they vary in size from a barely palpable mass to a cyst involving the entire lateral side of the neck. On rare occasions they extend into the mediastinum. Eight of these cases had been reported when Arnheim[2] reported two in 1932. A few occur at the angle of the jaw. Crying or coughing cause them to become more tense and evident. They are usually symptomless but may, through pressure, interfere with deglutition and respiration. They can become infected from the pharynx or through surgical interference. The overlying skin is thin and often has a bluish tint. Unless hemorrhage has occurred within them, they may be transilluminated.

Hygromata are endothelial-lined, usually multilocular, but occasionally monolocular cysts containing a straw-colored or blood-tinged lymphlike fluid. Projections protrude between muscle and fascial planes and surround nerves and blood vessels, making removal difficult and not without danger.

These cysts must be differentiated from hemangiomas, lipomas, dermoids, branchial cysts and abscesses. Usually the diagnosis is not difficult when they lie in the supraclavicular region. The peculiar doughy consistency of the mass is typical. Hemangiomas are usually compressible and cannot be transilluminated. Lipomas and dermoids are entirely different in consistency and also can be ruled out by aspiration. Branchial cysts are more tense and have a definite outline. Their location is typical, and they do not transilluminate. Confusion may arise when the tumor is located at the angle of the jaw, but palpation, transillumination and aspiration should give conclusive evidence.

Treatment consists in radical excision, which may be difficult because of the ramifications of this thin-walled growth. When it extends into the mediastinum, removal is usually impossible and x-ray therapy must be relied upon. Recovery has followed infection. Cures have taken place after aspirations, injections of sclerosing agents, x-ray and radium therapy, but these types of treatment are usually unsuccessful and dangerous. Expectant treatment may allow infection and a critical outcome. These lesions should be approached through a transverse incision following the skin creases, and all of the tumor must be removed. If remnants remain, the cyst will reoccur, frequently in a short time. Dowd[6] reports a recurrence in twenty-five days.

Case Report

On May 24, 1946, a male child, ten months of age, was admitted to the hospital because of a tumor of the neck which the parents had first noticed when the child was two months old.

When the boy was six weeks old, the parents noted a tendency of the baby to hold his head towards the left. Some two weeks later they noticed a lump on the right side of the neck and consulted Dr. Platou. The cyst was aspirated and about 5 centimeters of blood-tinged fluid removed. Operation was advised. On December 28, the baby was brought to the hospital but developed an upper respiratory infection and operation was deferred. At this time, an x-ray was taken of the neck. There was no apparent enlargement of the mass from the time it was first noted. However, the parents thought it was more evident at times.

The baby had been born by cesarean section because of toxemia in the mother, had been breast fed, development had been normal, and the child had been healthy except for the upper respiratory infection in December. The father has a congenital clubfoot.

On physical examination, this male child proved normal except for a growth in the left supraclavicular space. The overlying skin was thin and had a bluish tint. Transillumination was not possible. The cyst had a peculiar soft doughy feel and was difficult to outline. When the baby cried, the mass bulged and became more noticeable.

The x-ray report read as follows: "a soft tissue swelling of the right side of the neck extending from approximately the level of the second to the fifth cervical vertebra."

A diagnosis of hygroma or hemangioma was made and operation was performed on May 25, 1946. Through a 5-centimeter incision, the cyst was dissected free of its many attachments and removed. It projected between muscle and fascial planes, was attached to the jugular vein and in intimate relationship with the brachial plexus. The wound was closed with one drain. The baby made an uneventful recovery, and there has been no recurrence.

The cyst was multilocular, very thin-walled and contained a rusty or blood-tinged fluid. The pathological report read as follows: "A section reveals lymph, adipose tissue, nerve fibers, and muscle surrounding a large cystic space lined with endothelium. Diagnosis: Lymphangioma of the neck."

Hemangiomas

Deep hemangiomas of the neck are not common. They are soft cystic tumors which often can be evacuated on pressure. Their usual location is near the clavicle in the supraclavicular fossa.

Case Report

On August 13, 1945, a baby girl, eight months of age, was seen in consultation with Dr. Trueman. This baby had a soft fluctuant tumor of the neck just above the sternal notch, which had been noticed for two months. On August 5, the cyst had been aspirated of a bloody fluid, lipiodol injected, x-rays taken, and a cyst diagnosed. Operation was thought indicated.

A collar incision was made and a 2-centimeter cyst removed from the region of the sternal notch along with four smaller dilated vessel segments with little or no connection with the vascular system. These tumors were below the fascia in the mid-line, some extending up to the region of the right lobe of the thyroid.

The pathological report was as follows: "Cystlike tumors of the neck. Section shows blood vessels of various sizes, several of which contain free blood, others being empty. Scarring preformed vascular tissue and minimal round cell infiltrate are also noted. Multiple hemangioma."

Summary

The embryology, clinical aspects, and treatment of a number of congenital defects of the neck have been discussed and a case of each type reported. Several conclusions would appear to be evident:

1. A knowledge of embryology is essential in the recognition and treatment of these lesions.
2. Transillumination, aspiration, and x-ray are helpful procedures in their differential diagnosis.
3. Total excisions prevent recurrence.
4. Staining of the fistulous tracts with lipiodal and methylene blue is of value in their safe and adequate removal.

5. Skin incisions should follow natural creases in the neck to give good cosmetic results.

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Discussion

DR. MARTIN NORDLAND: It has been a pleasure to listen to this very interesting discussion of fistulas of the neck by Dr. William Rucker. The occurrence of congenital lesions of the neck is not rare, but in the experience of most surgeons these patients come for treatment rather seldom.

There are a few things relative to the care of the patient with the congenital lesion of the neck that I wish to emphasize. In the first place, because the attending physician does not realize the importance of the radical excision of these lesions the first time the patient is treated, inadequate cure often results. Many times the patient at the original treatment has had a simple incision made in the cyst, resulting in an unhealed fistula. Unusual swelling in the neck in the locations which Dr. Rucker has described should always be considered congenital in origin, and thorough treatment administered the first time. Secondly, it is taken for granted many times that the operative procedure for a cure is a simple one. On the contrary, it can become a very difficult dissection, and preoperative precautions should be taken for a meticulous and difficult job in order to obtain a thorough cure. Attention to the position of the patient on the table is very important. Good exposure is necessary. The position of a patient for a thyroidectomy makes a good position for the surgical treatment of such lesions.

The classical Sistrunk operation for the cure of thyroglossal duct cyst is still the best treatment, as Dr. Rucker has described. One point in the procedure which is worth while emphasizing is that it is always necessary to remove the segment of the hyoid bone as described in the technique. Many of these tracts continue above the hyoid bone to the cecum of the tongue.

Two things are important to mention in the treatment of a branchial cyst. First, the use of lipiodal and methylene blue in small quantity makes it easier to follow the tract in the dissection. The second, and a very important point, is one that Dr. Rucker made with reference to the incision. I think it is a serious mistake to make an oblique incision along the anterior border of the sternomastoid muscle. This always results in an ugly scar. The cosmetic result is very important, particularly in a young woman. Any and all of these lesions can be removed very well through one or more transverse incisions along the natural lines of the neck. I have two very interesting slides which show the value of the introduction of opaque lipiodal with methylene blue. The first slide shows the extent of the lesion. The second slide shows an x-ray picture of the specimen and also that the entire tract was removed.

DR. OTTO W. YOERG: I was privileged to read Dr. Rucker's paper, and after hearing his presentation tonight, I can now fully appreciate the effort and study that was necessary to make his thesis on congenital cysts of the neck so complete and interesting.

Many of you may not know that Dr. Rucker is an artist. All of the drawings shown on the slides were made by Dr. Rucker.

The contrast media which Dr. Rucker mentioned were first described in a paper on cysts of the urachus which I presented to the Minnesota Academy of Medicine on April 8, 1944. We had injected the sinus of the urachus cyst with lipiodol for x-raying just before surgery. Methylene blue was injected which, to my surprise, when coming in contact with the iodide produced an india black precipitate, which remained fixed in the tract, allowing the dissection of the tract and cyst to be made with ease. I have used this procedure in cysts of the neck, pilonidal sinuses, bowel fistulas, and various other sinuses with gratifying results.

I want to congratulate Dr. Rucker for a splendid paper and feel that the surgical society is privileged to have him as a member.

DR. A. F. BRATRUD: A number of years ago, Dr. Robitshek reported two cases of branchial cysts of the neck which were treated by injecting Carnoys' solution. Several articles appeared in different journals at that time. Dr. Rucker stated that it is rather dangerous to use sclerosing solution in the treatment of any congenital cysts of the neck. I have injected two cases of branchial cysts with very excellent results and without complications.

I would like to know the contraindication for using sclerosing solution in the treatment of these cases. It is not practical to inject thyroglossal cysts with sclerosing solution, as they do not lend themselves to this type of treatment at all, as there may be multiple tracts leading from a thyroglossal cyst.

Previously, when these articles were printed, they gave one contraindication to the use of sclerosing or Carnoys' solution in the treatment of these cysts. They should not be used where the fistula tract extends into the pharynx.

I remember seeing Dr. Gustav Schwyzer operate on a patient with a branchial cyst. He went into the pharynx on two separate occasions and had rather great difficulty in closing. With proper care in the use of Carnoys' solution, I cannot see any objection to this type of treatment when you consider the difficult surgery of branchial cysts. I would also like to ask Dr. Rucker what the incidence of malignancy is in branchial cysts.

DR. WILLIAM H. RUCKER: I wish to thank Doctors Nordland, Bratrud, and Yoerg for their kind remarks. Dr. Bratrud, I have had no experience with injecting sclerosing solution into branchial cysts, but I do not believe it is a good procedure. Reports in the literature are not favorable. As to the other question, malignancy, I believe, occurs in less than 1 per cent of these lesions.

TREATMENT OF ULCERATIVE COLITIS WITH PROPYLTHIOURACIL

A. B. ROEHLKE, M.D., and GORDON TESCH, M.D.
Elk River, Minnesota

Lawrence Martin[1] of Cambridge, England, in 1946 reported four cases of ulcerative colitis treated with thiouracil in which he obtained clinical benefit in all cases, and improvement in the ulceration of two of these. Later examination revealed improvement in the remaining two. Martin stated that hypothyroidism was not produced, as evidenced by normal basal metabolic rate. He also emphasized the fact that further trials are necessary before any definite claims can be established, though he considered it "justifiable to test any empirical remedy however devoid of logical basis it may appear." He stated that thiouracil is chemically similar to synthetic 5-methyluracil which was used effectively by Spiess et al[2] for the diarrhea of tropical sprue.

An opportunity was presented to try propylthiouracil on one of our cases.

Case Report

A girl, aged twenty-one, was admitted to the St. Barnabas Hospital on July 18, 1947, giving a history of having suffered from ulcerative colitis with numerous exacerbations for the past two years. She had been in the St. Barnabas Hospital on two other occasions, at which time vaccine therapy, dietary regime and chemotherapy had been given with only partial and temporary benefit.

She was markedly malnourished. She weighed 76 pounds. The hemoglobin was 70 per cent. Her serum albumin was 3.6 mg. per cent; serum globulin, 1.0 mg. per cent. The stool was packed with pus cells, and occult blood, four plus, was found. X-ray examination revealed extensive ulceration involving the entire colon. Sigmoidoscopic examination revealed ulceration starting at the dentate line and extending upward as far as could be seen. The mucosa bled freely.

Medical management was instituted without significant benefit. The temperature was septic in character, spiking from day to day from 100° F. to 104.2° F. Penicillin, streptomycin and dietary treatment were instituted without much benefit.

Dr. Carl O. Rice was called in consultation with the idea of preparing her for vagotomy, somewhat in accordance with the plan discussed by Dr. Dennis this evening. Parenteral feeding of glucose, amigen and alcohol were added to her oral feedings, so that her total caloric intake was maintained between 3,000 and 5,000 calories without forcing the oral feedings. The septic type of temperature reaction subsided during this period of treatment. No weight gain was observed, and it was therefore decided to resume dietary regime by mouth. The septic type of temperature reaction returned when the parenteral feedings were stopped, perhaps coincidentally, and within four or five days the patient asked to be discharged. She then weighed 75 pounds. She was discharged. Fifty-two days of hospital management had accomplished no significant benefit. Six to ten small bloody, foul-smelling stool evacuations persisted.

This situation prevailed at home for several days until 50 mg. of propylthiouracil was administered four times daily the first week, then three times a day. Almost immediately her diarrhea improved, stools became formed, and within a few days they were limited to one or two stools per day. In the first seven days she had gained 5 pounds in weight, and at the end of fourteen days she had gained 10 pounds.

Colon roentgenograms taken in November, 1947, still revealed the same findings as formerly reported, and proctoscopic examination on December 2, 1947, indicated definite improvement: a grey granular appearance, but no blood. There was some purulent exudate. The basal metabolic rate on November 11, 1947, was found to be plus 9. The menses was absent for seven months, until last week when she again had a normal menstruation.

She continued to remain clinically relieved. She now feels well, has gained interest in life, and though slightly lethargic, weighs 101 pounds. She has been receiving propylthiouracil for ninety days with no exacerbation of symptoms.

An explanation for the cause of improvement in this case cannot be given. We merely wish to say that a disease as destructive to life and health and unamenable to treatment as ulcerative colitis deserves the benefit of any empirical remedy no matter how void of rationality it may appear.

We have been happy to have the opportunity to present this brief case report to the Minneapolis Surgical society in hope that some of you may find occasion to try it before venturing into irreversible surgical substitution for the alleviation of the distressing symptoms of ulcerative colitis. We have been repeatedly advised by one of your members that a good surgeon is one who knows when not to operate.

Addendum

April 6, 1948—The patient continues to remain free of symptoms. This is the longest remission the patient has experienced since the onset of her first symptoms in July, 1945.

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Discussion

DR. CLARENCE DENNIS: Sometimes the patients are smarter than the doctor, and this is one of those times. I was among the physicians who were outsmarted by the patient. I didn't see her, but Dr. Rice was concerned about her care. Dr. Rice asked my opinion about it and gave me her story. I said I thought she would respond well to vagotomy. We have been familiar with the work of Martin and had given thiouracil to many of our patients. We have a couple in which we are defeated as far as operation is concerned. They will have a trial on propylthiouracil.

DR. LEO CULLIGAN: May I know the effect of thiouracil on the normal thyroid?

DR. MARTIN NORDLAND: I have never tried it on the normal thyroid.

DR. CLARENCE DENNIS: I think myxedema can be produced with thiouracil.

DR. MARTIN NORDLAND: Of that I am sure. I recently operated upon a patient who had had considerable thiouracil previous to a thyroidectomy. She was one of the patients who revealed the danger of this drug. When I first saw her, she had a temperature of 103°, marked cervical adenitis, agranulocytosis, and leukopenia. After recovery from these severe symptoms, a thyroidectomy was done. She was under the care of an internist preoperatively and postoperatively. Since operation she has developed a marked myxedema. Preoperatively she had a marked hyperthyroidism. I cannot believe that the operation alone could have accounted for this severe myxedema.

Minnesota Academy of Medicine

Meeting of December 10, 1947

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, December 10, 1947. Dinner was served at 7:00 p.m., and the meeting was called to order at 8:00 p.m. by the president, D. E. M. Hammes.

There were fifty members and three guests present.

Minutes of the November meeting were read and approved.

Drs. Goltz, Kenefick and Drake were appointed on a committee to draw up a memorial to Dr. A. R. Hall.

The following were elected as officers for 1948:

President.....Dr. T. A. Peppard, Minneapolis
Vice President.....Dr. J. A. Lepak, Saint Paul
Secretary-Treasurer..Dr. A. E. Cardle (re-elected)

The scientific program followed. Dr. R. T. La Vake, Minneapolis, presented a paper, after which Dr. Jerome Hilger, Saint Paul, read his inaugural thesis.

SEROLOGIC OBSERVATIONS IN THE TOXEMIAS OF PREGNANCY

R. T. LA VAKE, M.D.
Minneapolis, Minnesota

(Dr. La Vake's paper, followed by a discussion of it, appears on page 372 of this issue.)

AUTONOMIC DYSFUNCTION IN THE INNER EAR

JEROME HILGER, M.D., M.S. (In Otolar.)
Saint Paul, Minnesota

The autonomic nervous system is the mediator in the body's adjustment to its environment. The character of one's autonomic system is a matter of inheritance. There is variation in the quality and performance of the system in different individuals. This fact has been a matter of medical record since very early times. It was given particular impetus by the writings of Eppinger and Hess who in 1909 introduced the clinical pictures of the sympatheticotonic individual and the vagotonic individual into medical literature. It is interesting to follow the emergence of the autonomic system from the anatomic awareness of the nineteenth century to its present position in the forefront of functional clinical medicine. Disease whose pathological basis was then recognized and described only in the textbooks of morbid anatomy is now recognized and intercepted in the stage of early altered physiology—the stage in which autonomic dysfunction has not yet been translated into permanent histologic tissue change. The era of bacterial supremacy in disease concepts appears to be giving way to a realization that intrinsic bodily dysfunction in the neurovascular, neurosecretory and neuromuscular mechanisms may be of more importance in many previously obscure disorders than the presence of bacteria of dubious pathogenicity. The focal disease theory shrinks into relative insignificance as one bodily disorder after another, previously ascribed to it, is demonstrated to result from autonomic dysfunction. The emphasis of recent years on psychosomatic medicine is an expression of general medical awareness of the impact of man's environment on a neural mechanism which may not be equal to a smooth performance of its task.

The inner ear is a structure well-designed anatomically to give gross symptomatic expression to very minor alterations in its neurovascular and, perhaps, neurosecretory mechanisms. Few end organs in the body are as expressive of minute changes in autonomic control. It is a rigidly closed space. Circulation is supplied by an end artery and its branches. Collateral circulation is absent. The neural mechanisms dependent on this arterial supply are minute and delicate. Extremely fine vascular change results in relatively severe subjective sensory disturbance. These may be of an acoustic nature, a static nature, or both, dependent upon the arterial branch involved. The main artery is the internal auditory, a branch of the basilar. Its ramifications supply all parts of the labyrinth. A noteworthy branch, the vestibulocochlear artery, carries blood to the basal turn of the cochlea and to a portion of the saccule, utricle and posterior ampulla of the vestibule. Involvements of cochlear branches give tinnitus and produce hearing impairment when long continued. Vestibular branch changes alter one's sense of position in space. Dependent upon the degree of vascular change, this alteration may be minor, resulting in purely subjective symptoms or of more severe degree and manifested by the objective signs of nystagmus, falling, and past pointing. The subjective sensation of minor vestibular involvement need not be that of violent pulsion or of rotatory movement. When it is neither of these, its evaluation may be difficult, because it is purely subjective. It may, however, be evidence of the earliest functional vascular change in the vestibule. When the vestibulo-cochlear artery is affected, high tone tinnitus and vestibular imbalance are combined symptomatically. Major involvement of the internal auditory artery gives extraordinary subjective tinnitus in all frequencies and completely disrupts the patient's orientation in space.

The changes in neurovascular tonus in the inner ear may be precipitate and extreme or they may be of minor degree and long continued. The cataclysmic disorder of major vascular involvment was organized into a syn-

drome by the writings of Ménière. The chronic progressive degeneration of long continued minor neurovascular change has been obscured as catarrhal deafness or primary eighth nerve neuritis, for several medical generations. The altered physiology producing both pictures differs not in character but in degree. The autonomic nerve distribution which controls them has received little medical thought, though the clinical picture which results has filled medical volumes.

The autonomic nervous system is a motor mechanism comprised in reality of two opposed systems which maintain the equilibrium of the organism's adjustment to its environment—the one is the sympathetic system, the other the parasympathetic. Sympathetic innervation of the labyrinth arises from the thoracic cord and extends cephalad in the cervical sympathetic trunk and its continuation, the internal carotid nerve. The inferior carotico-tympanic branch of the latter traverses the bony septum between the carotid canal and middle ear. It is here joined by a branch of the ninth cranial nerve and the ramifications of the two on the promontory of the middle ear are termed the tympanic plexus. The tympano-sympathectomy of Lempert for intractable tinnitus is based on the destruction of this plexus through an external auditory canal approach which is accomplished by temporarily displacing the tympanic membrane. This sympathetic ablation may not be complete, however, and thus may miss its clinical goal due to possible additional sympathetic innervation of the inner ear through carotid plexus fibers which do not traverse the middle ear but reach the seventh nerve through other anastomosis, as of the deep petrosal nerve with the great superficial petrosal.

The tympanic nerve which emerges from the tympanic plexus traverses the middle fossa surface of the petrous portion of the temporal bone as the lesser superficial petrosal nerve. By connections of the latter with the geniculate ganglion, as well as by direct connecting fibers from the tympanic plexus to the geniculate ganglion and seventh nerve, sympathetic fibers from the cervical trunk and possible parasympathetic fibers from the ninth cranial nerve reach the seventh. The eighth nerve, or cochleo-vestibular nerve, carries no autonomic nerve, fibers from the brain stem. Yet, as shown by Lorente de No, this nerve does have such fibers when it ramifies to the cochlear and vestibular end organs in the fundus of the internal auditory canal. The connecting nerve filament which carries these autonomic fibers from the seventh to the eighth cranial nerve in their course in the internal auditory canal was demonstrated by de No in 1925. It completes the anatomic basis for the neurovascular syndrome of the inner ear.

There is little known about the effect of increased parasympathetic tonus in the inner ear. It is possible that it controls neurovascular phenomena through vasodilator activity and produces common clinical pictures. The usual experimental study has been done not by stimulation of the parasympathetic as a dynamic vasodilating force, but rather by destruction of the sympathetic innervation to produce that effect passively. Direct sympethetic stimulation has been carried out repeatedly. A mass of experimental work has followed three general lines:

1. Cervical sympathectomy and stimulation of the sympathetic at the cervical trunk or below.

2. The effects of drugs acting on the sympathetic system.

3. The results of operations on man with and without ear disease.

Fraser has summarized the work:

"The results are somewhat conflicting but the conclusion which emerges is as follows: constriction of the labyrinthine vessels leads to an increase in the excitability of the vestibule. Dilatation of these vessels leads to a diminution in the excitability of the vestibule with an increase in the acuity of hearing."

An additional physiologic effect in the inner ear is possible through autonomic stimulation. Increased neurosecretory activity through parasympathetic stimulation is possible. Shambaugh, Sr., in his work on the inner ear demonstrated to his own satisfaction that true secretory activity exists in the external sulcus cells of the cochlear duct. By correlation with other secretory mechanisms of the body, this activity should imply parasympathetic innervation. However, the onset of tinnitus or vertigo is sometimes so sudden and violent that it is hard to visualize it as based on sudden increase in neurosecretory activity alone.

Thus there is abundant experimental and clinical evidence that neurovascular changes in the inner ear occur through disturbance of the autonomic innervation. And there are some evidences that neurosecretory mechanisms exist which, in some instances, can contribute to the change in the inner ear. The clinical results in complaints of tinnitus, hearing impairment and vertigo, may be large for the degree of change involved because the inner ear is a rigidly closed space, and the contained neural elements are of extreme sensitivity.

One inherits his autonomic nervous system. If it be an unstable one, the potentiality toward certain clinical disorders is great. The impact of the environment results in manifestations of autonomic imbalance in many body systems. The mechanism is sometimes set in motion by single, specific effectors, such as foods, or inhalant substances, and the body system involved becomes established as a shock organ which thereafter may react to those substances independent of central neural controls. The clinical picture of allergy results. Often, and particularly in a vigorous climate, physical factors of temperature and humidity and their rapid alteration will produce striking autonomic effects. The result has been spoken of as physical allergy and sometimes as intrinsic allergy. There remains yet another effector, and more important perhaps than extrinsic food, inhalant or physical factors, which can produce marked clinical disorder through autonomic disturbance. That effector is the individual's own emotion. This factor brings confusion to the ordinary concepts of allergy. It is the effector in a high percentage of the intractable, or fixed, allergic reactions.

Autonomic dysfunction in the inner ear comes under the influence of these effectors. These factors operate particularly effectively upon a familially unstable autonomic system. In the same individual, one or all may be capable of producing the clinical syndrome of the inner ear. Foods and inhalants are of least importance. The inner ear is not commonly their shock organ. The individual who develops tinnitus, vertigo and hearing impairment from a specific food or inhalant is uncommon enough to be worthy of remark. Physical factors have more significance. Tinnitus is more commonly noted during periods of inclement weather and changes of season. Vestibular vertigo, with or without cochlear symptoms, is more frequently seen during the same periods. These, however, are observations that are difficult to demonstrate statistically because the individual who is truly physically sensitive is usually also most subject to emotional effects through the same autonomic mechanism, and emotional stress knows no season.

Williams deserves great credit for organizing the many autonomic imbalances of the head into the picture of intrinsic allergy of the head. One patient may manifest neurovascular and neurosecretory changes in many systems. In the head, Williams has grouped these into myalgias, vasodilating pains, chronic vasomotor rhinitis and endolymphatic hydrops. In his experience, 23 per cent of patients with endolymphatic hydrops had associated symptoms in the other fields. This is a conservative figure. In our experience it has been nearer 75 per cent when we include the patient with early symptoms of vasomotor labyrinthitis, as well as the patient in the advanced stage.

The terminology of the inner ear syndrome is confusing. It has run the gamut from Ménière's disease to endolymphatic hydrops. In order that all degrees of autonomic dysfunction in the inner ear be given a common etiologic diagnostic term, it would seem preferable to denote the disturbance as vasomotor labyrinthitis where all components of the inner ear are involved, and vasomotor cochlearitis or vasomotor vestibulitis where only acoustic or only static components have yet been involved. Gross disorder involves vestibule and cochlea and results in a syndrome pathognomonic of inner ear disease. It includes violent tinnitus and hearing impairment, severe vertigo, nausea and vomiting. Careful history demonstrates that in over 80 per cent of patients a premonitory phase precedes the first violent inner ear attack. This phase may last for years and be characterized only by intermittent tinnitis, with or without gradually developing hearing impairment, or by mild, transient vertigo, elicited only by abrupt positional change. These symptoms are evidences of poor autonomic adjustments in the neurovascular control of the inner ear. At this stage of the disorder the majority of patients will evidence other symptoms of cranial autonomic instability in the form of myalgia, vasodilating pain, or chronic vasomotor rhinitis, or in a positive family history of similar parental or sibling involvement. In fact, the associated vasomotor rhinitis and pain phenomena have been so commonly noted in association with these ear symptoms in past decades, that the misnomer of catarrhal deafness became descriptive of the chronic progressive cochlear degeneration which resulted. The misept practice of auditory tubal inflation became a standard otologic procedure. It is embarrassing to reflect today on the hundreds of thousands of middle ear inflations which have been doggedly indulged in, in an effort to relieve by aerodynamics a disorder which in reality results from nerovascular disturbance in the inner ear.

Most patients with inner ear symptoms from faulty autonomic balance never manifest the complete syndrome of inner ear disruption. All are potential candidates, however. The first appearance of tinnitus or of vertigo on quick alteration of position in a patient with associated evidence of autonomic imbalance, or a pronounced family history of same, marks the individual in the astute clinician's mind. It is interesting to follow the vasomotor vagaries of one such individual for several years and see the first complete inner ear syndrome appear suddenly and cataclysmically after a particularly severe environmental stress. For every individual who progresses to this point there are scores who continue for years with lesser involvments. When the latter concern vestibular arterial branches only, the pseudo-Ménière's syndrome of Dandy or vasomotor vestibulitis is noted in varying degrees of severity. When cochlear arterial segments alone are involved, the vasomotor cochleariti results in intermittent or constant tinnitus and progressive and permanent inner ear type hearing impairment. If the vestibulo-cochlear artery from the internal auditory is affected, it is reasonable to expect tinnitus of high pitch, high tone impairment and variable vertigo.

The pathological change in the inner ear which results from vascular alteration could conceivably take two forms; that resulting from frequent minor changes in vessel lumen, and that resulting from sudden major alteration in circulation. These may differ not at all in mechanism of production but only in degree of involvement. Relative to the former, the observations of Guild on the pathology of chronic progressive inner ear deafness are of moment. He states:

> "Normal-looking blood vessels are present in our sections in regions with total atrophy of the organ of Corti. The fact that the areas of end-organ atrophy are often very sharply circumscribed suggests occlusion of terminal arteries as the cause; we have no histological evidence, however, to support this view. The clinical and pathological evidences of systemic vascular disease, as recorded in our tables, also indicate that arteriosclerosis or arteriolosclerosis is not the cause of organ of Corti atrophy."

It is probable that recurrent and transient alterations in vessel lumen produce the permanent neural damage without histologically demonstrable vessel change.

At the other end of the scale of neurovascular change, the pathology of the complete inner ear syndrome with violent clinical manifestations in acoustic and static spheres was shown first by Hallpike and Cairns and since corroborated by Lindsay and many others. They

have shown a gross dilatation of the endolymphatic system with destruction of the neural elements. It can only have resulted from transudation and edema originating probably from the stria vascularis or from hypersecretion, perhaps from the external sulcus cells of Shambaugh.

By what mechanism of the autonomic innervation are these vascular and possibly secretory effects produced? Is it by dynamic activity of the sympathetic segment with the production of vasospasm? Or is it by rigorous overactivity of the parasympathetic with forceful vasodilation and active secretory stimulation? Williams, two years ago, called attention to the work of Otfried Muller in Switzerland who, "described an inherited tendency for capillary loops to behave in an abnormal manner on exposure of the organism to physical and emotional stimuli." Vasospasm impedes the flow of blood through the capillary loops, and endothelial damage with transudation and edema results. This vasospasm may be an expression of sympathetic overactivity. Therapeutic response to vasodilating drugs lends support to their viewpoint. Furthermore, there is no conclusive experimental evidence that parasympathetic vasodilator activity exists in the inner ear.

Modern drug therapy in vasomotor cochleariti, vasomotor vestibulitis and vasomotor labyrinthitis, in either the acute or chronic form, aims at re-establishing the integrity of the inner ear circulation. The forceful vasodilation of intravenous histamine, used in constant drip or intermittent daily injection, is probably most purposeful in the acute stage of severe vascular involvement. In the past year we have alternated its use with that of intravenous tetraethylammonium chloride. The transient autonomic block at ganglion level produced by this drug can terminate an acute, severe vasomotor labyrinthine attack. Its use has gone far to clarify our thinking on the influence of the autonomic system in producing severe vasodilating pains about the head, as well as its role in the violent episodes of the inner ear. We are still broadening our experience with it and here offer its use as therapeutic evidence of autonomic influence in vasomtor labyrinthitis. We believe it will have a place in accepted therapy. Nicotinic acid is also used for its vasodilating influence. When used in frequently repeated doses over long periods of time, it affords the most useful long-term control measure available today. The local neural block effected by the misnamed antihistamine drugs can in an occasional case correct the vasomotor dysfunction when used symptomtatically.

The commonest error in therapy is the tendency to guide it by the response of the patient's vertigo. Horton first accented the patient's hearing as the best indicator of adequate treatment, particularly in the acute vasomotor disturbances. Treatment must be continued until maximum cochlear return has been effected. The patient may have no further vertigo long before this stage. The cochlea is a more delicate mechanism than the vestibule. Oft-repeated vascular damage is cumulative and irreversible in it. It must be reversed shortly after the onset of symptoms by vigorous therapy, or an additional increment of hearing loss will be permanent. The audiometer is essential as a gauge of acuity. Voice tests are inadequate. They are neither accurate nor do they test the high frequencies usually most severely involved.

Some systemic factors have been noted repeatedly to have an influence on the production of inner ear symptoms through autonomic mediation. In the treatment of the disorder they should be given proper attention as contributors only. Endocrine factors in women which influence vasomotor control during the menopause, or at the time of the menstrual period, accent vertigo and tinnitus in the autonomic unstable individual during those periods. The low metabolic rate commonly found in both males and females with autonomic instability need not be a cause of their inner ear symptoms but rather another result of faulty autonomic regulation. The use of thyroid, therefore, should not be viewed as a complete method of treatment but as an adjunct only. The influence of fatigue and tobacco in the production of vasospasm makes adequate rest and abstinence from smoking one of the first rules of proper therapy.

Drug therapy has distinct limitations in a disorder in which emotional factors play a major etiologic role. The patient with early and still tractable vasomotor irregularity in his labryinth often needs correction in his attitude toward life. Drug therapy serves best in the acute severe phase of vasomotor change. Psychotherapy is frequently more important in maintaining stability once regained.

The patient with far advanced vasomotor labyrinthitis usually has permanent loss of useful hearing in the involved side with a vestibular mechanism still sufficiently viable to repeatedly disable him with attacks of vertigo. Often his abnormal neurovascular habit is so deeply rooted that it responds poorly, if at all, to medical and psychiatric correction. The number of advanced cases comprises an extremely small percentage of the total with vasomotor labryinthine disease. With early recognition and proper medical and psychiatric treatment, this small percentage will dwindle further. Surgical destruction of the involved labryinth is the only control measure one can at present offer the intractable case. Dandy accomplished this with differential intracranial section of the eighth nerve. Today, that quite formidable procedure is utilized only for cases with disabling and uncontrollable vertigo who have retained good cochlear function, or in cases with bilateral vestibular involvement. These are uncommon. The labryinthotomy procedure of Day has largely replaced intracranial section. It is accomplished through a mastoid approach to the lateral semi-circular canal and is a procedure with little morbidity. It now appears that a technique elaborated by Lempert may even be preferable to that of Day. It is effected through the external auditory canal. The drum head is temporarily displaced so as to expose the medial wall of the middle ear; the incus is sectioned, thus freeing the stapes from the ossicular chain; the stapes and oval window membrane are then removed and the round window membrane perforated; the drum head is replaced. Morbidity is minimal, and postoperative vertigo is dependent only on the

(Continued on Page 424)

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(Continued from Page 422)

amount of vestibular activity present preoperatively, as evidenced by the caloric test.

With either the Day or Lempert procedures, residual hearing is lost on the involved side. For that reason, this operation is reserved for disabled and uncontrollable cases with no useful hearing remaining on the involved side. The possibility of opposite side involvement in so general a disorder as vasomotor instability exists. The sacrifice of useful hearing could be disastrous if, in the future, vasomotor cochlearitis developed in the opposite ear.

The use of streptomycin by intramuscular injection to destroy the vestibular end organ by selective neurotoxic action is receiving wide attention. It is possible that its usage should be limited until its neurotoxicity is conclusively shown to exist for the vestibular end organ alone. An infrequent case of vasomotor vestibulitis may suffer severe and disabling vertigo, yet show no cochlear component to help in lateralizing the disorder. Here, differential section of the eighth nerve is not applicable because the side producing vertigo may not be definitely determinable. Labyrinthotomy is not applicable because useful hearing would be destroyed. Streptomycin destruction of both vestibules would seem reasonable in such an instance.

Summary

The syndrome of the inner ear results from neurovascular, and possibly neurosecretory, change in the labryinth.

This change may be acute and severe, as the result of sudden alteration in the vascular tonus of large segments of the neural mechanisms of the inner ear, and produce the picture of severe acute vasomotor labyrinthitis, vasomotor cochlearitis, or vasomotor vestibulitis; or it may be chronic and insidious, as the result of long continued and intermittent alterations in the vascular tonus of many small segments of the neural mechanism of the inner ear, and result in chronic vasomotor labyrinthitis, vasomotor cochlearitis, or vasomotor vestibulitis.

These changes are mediated by autonomic mechanisms which differ not in kind but in degree.

They occur most frequently in individuals with inherited autonomic instability.

The majority of these individuals manifest evidences of autonomic dysfunction in other body systems.

Extrinsic physical factors and intrinsic emotional stress are the commonest precipitors of autonomic dysfunction in the labryinth.

Proper medical and psychiatric treatment can relieve and control many of the vasomotor disorders of the inner ear.

A small percentage require surgical destruction of labryinthine components because of intractable autonomic dysfunction.

Discussion

DR. L. R. BOIES, Minneapolis: It has been suggested that the first paper on this evening's program might be a bit over our heads. The same thought occurs to me in regard to Dr. Hilger's thesis. Nevertheless, his thinking is probably in the vanguard of thought which will explain some things which have not been satisfactorily explained by our clinical experience to date.

Dr. Hilger remarked that "the focal disease theory shrinks into relative insignificance as one bodily disorder after another, previously ascribed to it, is demonstrated to result from autonomic dysfunction." Probably no area in the body has been searched more diligently for a source of infection to impair bodily function than has the field of activity of the otolaryngologist. And it is a fact that the activities of modern rhinologists have decreased at least 50 per cent in the matter of focal disease.

Another activity which has undergone a change in our specialty has been the correction of supposed nasal pathologic conditions to cure chronic headache. It is now known that in most victims of a headache which is a chronic problem, "sinus disease" or other nasal pathology is not the common cause, but the headache is often related to some autonomic dysfunction which alters normal vascular physiology.

I have been stimulated by Dr. Hilger's presentation, and I thank him for it.

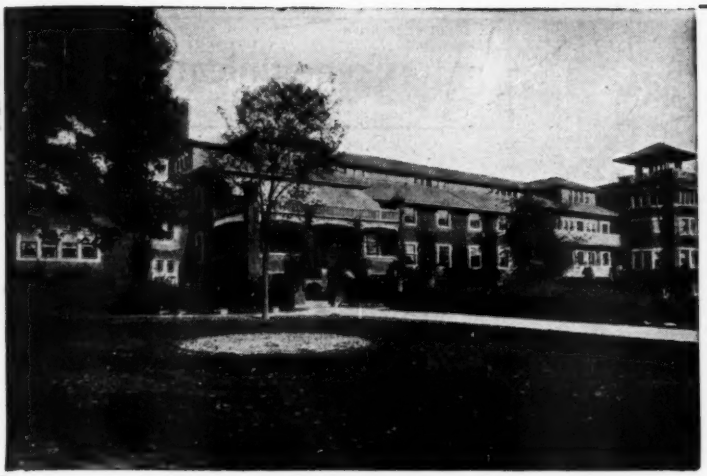
DR. C. E. CONNOR, Saint Paul: I have no comment on the technical content of the paper; it covers the field very adequately. There is one thing I would like to say, however. Dr. Hilger said that in the past there have been many aspects of otology which have appeared hopeless and in which we have had nothing to offer in the way of treatment; many patients have observed, "When are you otologists ever going to make any progress in your field?"

I think some progress has been made in the last decade or two. New knowledge in physiology, in biochemistry, in acoustics and electronics, is being brought to bear on many obscure conditions. There are new techniques in the approach to otological problems; Crowe, at Hopkins, and others have done much work in which antemortem studies of cochlear function are correlated with postmortem pathological examinations. The combination of new knowledge in other fields and new methods of study in otology are beginning to yield tangible results.

DR. HILGER, in closing: I want to thank Dr. Boies and Dr. Connor. Certainly the basis of our advances in the last ten years is physiology. Many of the things that one feels will be definitely demonstrated in the next few years as fact are now in the formative stage of part fact and part theory. In treatment, I think more emphasis must be placed on psychotherapy than has been the trend in the past. Our Fellows in otolaryngology at the University cannot fully appreciate it now, but the changes in our field have been very great in the past ten years. We have become much less mechanical minded and much more physiologic.

The meeting adjourned.

A. E. CARDLE, M.D., *Secretary.*



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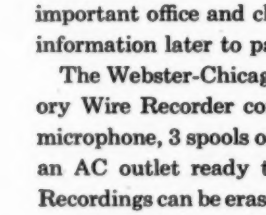

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Communication

To The Editor:

A letter written by Dr. Kano Ikeda appeared in the January, 1948, issue of MINNESOTA MEDICINE stating the objections of the clinical pathologists to a resolution unanimously passed by the House of Delegates of the Minnesota Medical Association in July 1947, petitioning the Minnesota State Board of Health to include routine RH typing in its laboratory service. As the one who presented this matter to the Minnesota Society of Obstetrics and Gynecology at its meeting during May 1947 in Duluth, at which time a resolution was unanimously approved requesting the House of Delegates of the Minnesota Medical Association to petition the Minnesota Board of Health to include the above services in its laboratory, I would like to present a different point of view.

With the introduction of the RH and AB factors as a cause of erythroblastosis a problem comparable to the Wassermann problem of some decades ago has been created. Then as now with blood typing, private facilities for doing Wassermann tests were well established and available, but unfortunately were not generally utilized as a routine, especially during pregnancy. Syphilis being a communicable disease there is no longer any question that its recognition through Wassermann testing is a public health function. Although RH and ABO factors are in a different category, disasters due to the omission of blood typing may well be considered public health problems. Among these, erythroblastosis especially engages the attention of the pediatrician and obstetrician. It is now well established that the RH negative mother of an erythroblastotic baby with the RH positive homozygous husband will continue to have erythroblastotic babies. The same is true with the A and B factors but the incidence is much less frequent. Consequently, although the latter may be involved in similar situations, this discussion will be limited to the problems involving the RH factor. At the present time the most hopeful manner in which the presumptive erythroblastotic baby can be treated as through the possible early induction of labor followed by an exchange transfusion of the infant with RH negative blood. This in turn necessitates definite knowledge of the RH status of a woman early in pregnancy. Because RH typing in the pregnant woman in spite of the existing facilities is now for the most part being omitted it would seem desirable for the State Board of Health to take over and exploit the procedure at least in this group. The same specimen of blood drawn for the Wassermann test could easily be used for RH blood typing.

At the moment this would appear to be of some disadvantage to the clinical pathologist, but will it not eventually result in more work for him? First, because once it has been established that the pregnant woman is

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RH negative it is incumbent upon the attending physician to ascertain not only the RH status, but the heterozygocity and the homozygocity of the husband. Secondly, when it has been settled that a pregnant woman is RH negative and the husband is RH positive, it then becomes the duty of the attending physician to determine whether or not iso-immunization is developing in the prospective mother. Such determinations could not be handled in the laboratories of the State Board of Health and would necessitate the utilization of the facilities of the various clinical pathologists. It is not the aim of the leaders in this movement to have the State Board of Health establish a complete hematological laboratory. Only routine RH and ABO typing would be done, because the equipment necessary for the determination and titration of RH and AB iso-immunization is quite beyond the budget limits of the Board of Health.

Generally the public is not inclined to pay for what it regards as unnecessary services. Rather an attitude prevails of, "It can't happen to me." However, once the seriousness of a given medical situation is revealed, cost means little.

Potentually, every RH negative woman with the RH positive husband is confronted with a serious situation if she becomes pregnant. Even though in the minority, with those who are destined to have an erythroblastotic baby due to RH sensitization, the only hope for even one surviving child may be in the early recognition and the subsequent titration course of the iso-immunization. Erythroblastosis is more lethal than congenital syphilis and much less amenable to treatment. Public attitudes then being what they are, it would seem not only desirable but logical for the State Board of Health to undertake the routine typing for the RH factor.

No physician would wish to establish an agency detrimental to any member of the medical profession. If routine RH and ABO typing by the Minnesota State Board of Health would seriously handicap the clinical pathologists it would be one thing, but if its exploitation potentially adds to his benefits it is quite another. Controversy as to the principle involved becomes trivial. Even if this were untrue Medicine must maintain that human problems transcend limited interests of the individual.

In conclusion, routine RH typing by the State Board of Health in Minnesota would be no innovation. As of January 1947, the Boards of Health in seven states, Massachusetts, Vermont, Georgia, South Dakota, Nebraska, Florida, and Connecticut do routine RH typing. In eleven states, California, New York, New Jersey, Wyoming, Michigan, Idaho, South Carolina, Ohio, Rhode Island, Kentucky and Wisconsin RH typing is done by the Boards of Health on request. In three of the above named states determinations and titrations of iso-immunizations are a function of the Health Boards Laboratories.

May I urge the Council of the Minnesota Medical Association to act immediately on the petition of its House of Delegates.

Yours truly,

C. J. EHRENBERG, M.D.

March 11, 1948.

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UROLOGY—Intensive Course, two weeks, starting April 12.
FRACTURES & TRAUMATIC SURGERY—Intensive Course, two weeks, starting June 7.
OPHTHALMOLOGY—Intensive Course, two weeks, starting May 10.
Ocular Fundus Diseases, one week, starting June 7.
GYNECOLOGY—Intensive Course, two weeks, starting April 26, June 7.
Vaginal Approach to Pelvic Surgery, one week, starting April 19, June 21.
OBSTETRICS—Intensive Course, two weeks, starting April 12, June 21.
MEDICINE—Intensive Course, two weeks, starting April 26.
Personal Course in Gastroscopy, two weeks, starting June 28, July 12.
Electrocardiography & Heart Disease, four weeks, starting May 3.
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Gastroenterology, two weeks, starting May 24.
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In Memoriam

CHRISTIAN FREDERICK CARSTENS

Dr. C. F. Carstens, a practitioner at Hibbing, Minnesota, since 1914, died on February 19, 1948. He was sixty-eight years old and had been disabled since November, 1942.

He was born in Ackley, Iowa, October 7, 1879. He attended Lake Forest Academy and Lake Forest College at Lake Forest, Illinois. After graduating from college he taught school in the Philippines for three years. In 1904, he returned to this country and studied medicine at Johns Hopkins, where he graduated in 1908.

Dr. Carstens joined the staff of the Rood Hospital in 1910, serving for four years in Keewatin before moving to Hibbing in 1914. During World War I, he served in the medical officers training camp at Fort Riley. In 1941, he helped form the Mesaba Clinic at Hibbing.

He was a member of the St. Louis County Medical Society, the Minnesota State and American Medical Associations. He was also a member of the Mesaba Lodge of Masons, the Chamber of Commerce, the Mesaba Country Club, and the Algonquin Club. He had served as chief of staff of the Hibbing General Hospital and as a director of the Children's Home Society of Saint Paul. He was a member of the Presbyterian church.

Dr. Carstens is survived by his widow, Lucile, and a daughter, Caroline, who is attending Stephens College, at Columbia, Missouri.

THEODORE F. HAMMERMEISTER

Dr. Theodore F. Hammermeister, well known surgeon of New Ulm, died February 14, 1948, of a heart attack.

He was born at Morgan in Eden township, Minnesota, July 25, 1887. He obtained his medical degree from the University of Minnesota in 1914 and interned at Northwestern Hospital, and at the University Hospital, Minneapolis.

In June, 1915, Dr. Hammermeister went to New Ulm, where he associated with the late Dr. O. C. Strickler until 1918, when he opened an office of his own. In 1926, he went into partnership with Dr. C. A. Saffert.

He was a member of the Redwood Brown Medical Society, the Minnesota State and American Medical Associations. He was also a member of the Southern Minnesota Medical Association. Interested in education, he served many years as a member of the New Ulm school board and as president of the board. For ten years, he was health officer of New Ulm.

Dr. Hammermeister married Isobelle M. Dunn on June 8, 1915. Mrs. Hammermeister died in 1933. A son, Robert, now lives in Minneapolis. In 1935, Dr. Hammermeister married Mrs. Pearl Rexford, who survives him.

HAWLEY S. SANFORD

Dr. Hawley S. Sanford, son of Dr. and Mrs. A. H. Sanford of Rochester, died February 24, 1948, in Detroit, Michigan, of acute coronary disease.

He was born in Milwaukee, January 24, 1909. He attended public schools in Rochester and received his M.D. from Harvard Medical School in 1933. Interning at the George F. Geisinger Memorial Hospital in Danville, Pennsylvania, he entered the Mayo Foundation as a fellow in surgery in 1934. Later, he changed his major subject to neurology and received the degree of M. S. in neurology and psychiatry from the University of Minnesota in 1937. At this time, he went to Detroit, where he was neuropsychiatrist on the staff of the Henry Ford Hospital. He served as a major in the Army Air Force in World War II.

Besides his parents, Dr. Sanford is survived by his wife, a son and daughter, and a brother, Dr. Raymond A. Sanford of Rochester.

DE COSTA RHINES

Dr. De Costa Rhines, formerly of Caledonia, died at the home of his daughter, Mrs. Hazel L. Hosfield in Owatonna, Minnesota, on February 9, 1948, at the age of ninety-five.

Dr. Rhines was born January 18, 1853, in Jackson County, Michigan. He graduated from the Hahnemann Medical College at Chicago in 1884 and began practice at River Junction, Michigan. After changing his location to Houston County, Michigan, he moved to Caledonia in 1899. Here he practiced until his retirement several years ago. In 1941, he and Mrs. Rhines moved to Owatonna to make their home with their daughter.

He was a former member of the Houston-Fillmore County Medical Society, the Minnesota State and American Medical Associations. He served for many years as county coroner, a term as president of the village council and on the school board. He was also a past master of the Caledonia Masonic lodge.

Since moving to Owatonna, Mrs. Rhines passed away. Dr. Rhines is survived by one daughter, Mrs. Hosfield, and one son, Ray N. Rhines of Burlington, Washington.

Dr. Rhines' practice of over fifty years extended back to the horse and buggy days and represented years of devotion to his patients and country.

AARON FRANKLIN SCHMITT

Dr. Aaron F. Schmitt, a surgeon of Mankato until his retirement from practice in June, 1921, passed away March 15, 1948, at his home in Minneapolis, at the age of seventy-eight. He suffered a coronary occlusion on June 5, 1925 and a stroke in August, 1925, with resulting hemiplegia.

Dr. Schmitt was born in New Trier, Dakota County, Minnesota, February 12, 1870. He attended high school in Mankato. His M. D. was obtained from Rush Medical College in 1902. He practiced at Wells, Minnesota, from 1901 to 1906 and at Mankato from 1906 to 1921. In 1910

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he took postgraduate work at Berlin, Vienna, London, and Leeds.

He was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations. For a number of years, as chairman of the Program Committee of the Southern Minnesota Medical Association, he was the dynamic force which brought the association into prominence. He was a member of the American College of Surgeons and a former member of the Minnesota State Board of Medical Examiners. He was also a member of the Scottish Rite and the Osman Shrine.

Dr. Schmitt is survived by his wife, two daughters—Mrs. E. C. Merrill of Harrah, Washington, and Mrs. Harold Habein of Rochester, two sisters—Mrs. David Kienholz of Stanley, Wisconsin, and Mrs. Frank Bailey of Pittsburgh, and two brothers—George Schmitt of Madison and Dr. Samuel C. Schmitt of San Diego, California.

ROBERT OTTO MEYER

December 12, 1947, marked the passing of one of the great leaders in contemporary Medicine, Dr. Robert Otto Meyer. His death in his eighty-third year occurred in Minneapolis, Minnesota, where he lived after his exile from Germany in 1939. Inasmuch as his biography has been well chronicled, another is superfluous. Dr. Emil Novak of Baltimore presented the first in an address before the sixty-ninth annual meeting of the American Gynecological Society, entitled "The Life and Works of Robert Meyer." This address was published in the *American Journal of Obstetrics and Gynecology* of January, 1947. Secondly, Dr. Meyer's autobiography is currently being published as a serial in the *Journal of the History of Medicine and Allied Sciences,* which is later to be presented in book form.

Dr. Meyer was a cultured European scholar and scientist. He was a true aristocrat through the humble appreciation of his own knowledge and attainments, of which he could not be deprived but which were never flaunted. Born to moderate wealth during a peaceful and prosperous era in German history, he was destined to experience increasing material adversities through World War I, the Hitler regime, and World War II. In spite of all this, he never expressed resentment or indignation. Instead, events in his life were historical incidents that he wove into a systematic pattern in which he was never the victim but always the master. In his own words taken from his autobiography which was written in his last years, "I have had an exceedingly beautiful life which would be worth living once more. I have always had the feeling in difficult situations that things would come out well, and they came out right. I let life approach me, made my decisions and they were right."

One could not be in his presence for long without feeling his consummate kindliness, a quality made more gracious by its simplicity, sincerity and dignity. An authority, he was never the austere master, but rather the sympathetic colleague. No problem was so simple that it could not be followed to its end. On the other

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hand, with more complex problems, well-chosen questions invariably led on to greater clarification or solution. His knowledge was precise, well-defined and usually philosophical. An example of this was his definition of menstruation. "It is a cyclic uterine bleeding, occurring ideally every twenty-eight days, preceded by ovulation, corpus luteum formation and a secretory endometrium." These requisites implied the possibility of pregnancy. Consequently, the term "anovulatory menstruation" of Corner, Hartman, Novak and others, although a cyclic uterine bleeding but from a proliferative endometrium, was conclusively in Dr. Meyer's mind a misnomer, confusing and philosophically incorrect. Menstruation traditionally was related to reproduction and pregnancy, so obviously an anovulatory uterine bleeding, although cyclic, physiologic, and probably normal to the human female at times in her menstrual life must be defined as such. A precise concept was necessary for thinking properly in a scientific realm.

His microscopy is worthy of mention. He would spend from minutes to innumerable hours studying microscopic slides. After this the clinical history would be given, but only after the diagnosis had been made microscopically. If there was no agreement, then the whole was reviewed and reviewed again until a correlation was made. Through methods such as this, his monumental concepts were formed concerning, only to mention a few, the distinguishing characteristics of corpus luteum-endometrial relationships, hydatidiform mole and chorionepithelioma, and the various attributes of ovarian tumors. Many of these concepts are still recognized as his but others, accepted now as fact, no longer carry the connotation of his name. Although he was cognizant of this, he suffered no indignation. Rather, it was another manifestation of his true aristocratic character to know his contribution was an established truth. Whether the world recognized him or not made little difference.

Although the scientific attainments of Dr. Meyer were the factors in making him a world figure, he possessed others which contributed immeasurably to his stature. Unfortunately for him and his colleagues in Germany, he had no interest in politics. This was the function and concern of the politician, and as a man of science he would have none of it. Whether the course of German history would have been shaped differently had men of his proportions embraced politics will forever be an unanswered question. However, during his stay in the United States, he established his citizenry, a privilege in which he took pride.

Dr. Meyer was an expert in the field of philology. The study of Latin and Greek in his early years, especially the former, which he considered the most precise of all languages, provided the background. The precision of his written English was remarkable, although the spoken word was for him never without difficulty. On one occasion he took exception to the improper use of certain English words by an American colleague. During the subsequent controversy his knowledge of word derivation was such as to cause the retreating colleague to admit admiringly that it was expected of him to teach histology and embryology, but not English.

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Dr. Meyer's philosophy extended far beyond the limits of his scientific thinking. Religion, literature, arts and music were to him of vital concern. Although a Jew racially, he was reared in the Lutheran Church. After maturity he confessed no creed, but his moral and religious convictions were profound and compelling.

His interest in and knowledge of literature transcended that of German origin. He was a keen student of Goethe, both from a literary and philosophical standpoint, but he was also thoroughly familiar with Shakespeare and could recite either with almost equal facility.

Quoting from Dr. Meyer's autobiography, "Music played a large role in my home town and in our home." He was privileged to have known Grieg intimately through his brother who played the piano with Grieg publicly. Further, he was familiar with Liszt, Brahms, Joachim, Saint-Saens, Clara Schumann and others, in that he heard and saw them many times. It was fascinating to hear him describe the contemporary and his own reaction to the first production of the works of Richard Wagner. During World War I, he was the organizer and leader of a symphony orchestra in a German base hospital in Brussels, of which he was a staff officer. This orchestra gave periodic concerts for the populace of Brussels. Although he enjoyed music, he maintained it was not high on the scale of human aptitude. Often he pointed out that musical prodigies were common when compared to those in science and mathematics.

Notwithstanding Dr. Meyer's intellectual accomplishments which made him at all times stimulating and instructive, there was more. He was human. The "common touch" was natural to him. He was equally affable as a guest or host. In the presence of women, he was courteous to the point of being gallant. Yet, in the presence of men he was natural even through the most risqué of stories. His wit was spontaneous and quick. Once when asked if food at a particular resort in which he had been a guest was "pretty good," he replied immediately, "Yes! pretty, but not good."

To have known him was a pleasant privilege, but also a prerogative that results in a deep sense of loss with his passing. Although the memory of his person will grow dimmer through the years, the truths which he established and stood for will shine out eternally, not only to us who knew him, but to posterity.

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- Reports and Announcements -

AMERICAN ACADEMY OF PEDIATRICS

The Area Meeting of the American Academy of Pediatrics will be held at the Hotel Schroeder, Milwaukee, Wisconsin, June 28-30, 1948.

Members of State Medical Societies are welcome to attend. The registration fee will be $5.00 for such nonmembers, together with a $5.00 registration for which each registrant receives a ticket to the banquet, making a total registration fee of $10.00.

Registration may be made ahead of time by writing to Dr. C. G. Grulee, Secretary-Treasurer, American Academy of Pediatrics, 636 Church Street, Evanston, Illinois, enclosing a check for $10.00, or registration may be at the time of the meeting.

AMERICAN COLLEGE OF CHEST PHYSICIANS

The Board of Examiners of the American College of Chest Physicians has announced that the next oral and written examinations for Fellowship will be held at Chicago on June 17. Candidates for Fellowship in the College, who would like to take the examinations, should contact the Executive Secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

The fourteenth annual meeting of the College will be held at the Congress Hotel, Chicago, June 17 to 20. An interesting scientific program has been arranged for the meeting, and speakers from several other countries are scheduled to appear.

AMERICAN COLLEGE OF SURGEONS APPROVES USE OF NURSE ANESTHETISTS

The Board of Regents of the American College of Surgeons, at a meeting on February 22, 1948, adopted the following resolution:

The American College of Surgeons regards with deep concern the actions of some physician anesthesiologists in giving the impression to the laity in the public press that it is unsafe for experienced nurse anesthetists to conduct surgical anesthesia. While it supports the increasing tendency of having physician anesthesiologists in charge of surgical anesthesia, it deplores at this time any propaganda for the elimination of the trained nurse anesthetist. On the contrary, the American College of Surgeons is of the opinion that, in view of the inadequacy in number of the physician anesthesiologists and in view of the splendid record of achievement of the nurse anesthetists, institutions engaged in the training of nurses for this purpose should be encouraged to continue their programs.

AMERICAN HEARING SOCIETY

Beginning April 1, 1948, the American Hearing Society, which has been housed for twenty-five years in the Volta Bureau Building, 1537 35th Street, Northwest, will be occupying quarters at 817 14th Street, Northwest, Washington 5, D. C. Two factors influenced this move: an opportunity to secure a suite of offices (recently released by the government) on the fifth floor, with elevator service, in a downtown location, and a decision by the Board of Trustees of the Volta Bureau to remodel their building. Through telephone and personal contact, co-operation and co-ordination of efforts will continue between the two organizations, the Volta Bureau and the American Hearing Society.

NORTH DAKOTA STATE MEDICAL ASSOCIATION

The annual meeting of the North Dakota State Medical Association will be held at Jamestown, North Dakota, on May 23, 24 and 25. The scientific sessions will be held May 24 and 25. Members of the Minnesota State Medical Association are cordially invited to attend. Reservations may be made through the office of the North Dakota State Medical Association, Box 1198, Bismarck, North Dakota.

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL

Summer sessions for practicing physicians and medical students in the clinical and preclinical years will be held June 14 to 24 and July 26 to August 28. Courses both in the basic sciences and in clinical subjects will be offered.

The clinical facilities of the University Hospitals, Minneapolis General Hospital, Veterans Hospital and other affiliated hospitals of the medical school will be used, and clinical service will occupy approximately three-fourths of the time of those taking clinical subjects. This is an unusual opportunity for practicing physicians actually to work in these hospitals. Courses which are part of the regular medical curriculum will also be offered in the basic sciences and clinical subjects.

Further information may be obtained from the Dean of the Summer Session, 880 Administration Building, University of Minnesota, Minneapolis 14, Minnesota.

WASHINGTON COUNTY SOCIETY

At the regular meeting of the Washington County Medical Society, held in Stillwater on March 9, the principal speaker was Dr. C. W. Rogers, Minneapolis, who presented an x-ray illustrated lecture entitled "Diagnostic Difficulties in Urology."

During the business section of the meeting, action was taken on Dr. George McCue Ruggles' request for the society's approval of the Blue Cross plan for his hospital at Forest Lake.

Dr. John W. Stuhr, who had been hospitalized for a period following the fracturing of his left patella on January 18, was able to preside at the meeting. He had as his guest, Dr. S. W. Arhelger, who is studying under a fellowship in surgery at the University of Minnesota.

Of General Interest

Dr. Karl E. Johnson, Duluth, spoke on cancer control at a meeting of the West End Business and Civic Club in Duluth on March 16.

* * *

Formerly of the Veterans Hospital at St. Cloud, Dr. Rudolph B. Skogerboe in March opened an office for the general practice of medicine at Karlstad.

* * *

Members of the Blue Earth Valley Medical Society, meeting in Blue Earth on February 26, heard Dr. James W. DuShane of Rochester speak on "Congenital Heart Disease."

* * *

In Montreal, Quebec, at a meeting of the Montreal Neurological Society on March 10, Dr. L. M. Eaton of Rochester presented a talk and a motion picture demonstration on "Myasthenia Gravis."

* * *

At a meeting of the District of Columbia Medical Society, in Washington, D. C., on February 18, Dr. Philip S. Hench, Rochester, presented a paper entitled "Diagnosis and Treatment of Gout."

* * *

Medical aspects of atomic explosions were discussed by Dr. Hilbert Mark, Minneapolis, at a meeting on February 17 of army organized reserve medical units at Fort Snelling.

* * *

"Infections of the Urinary Tract" was the title of a paper presented by Dr. T. L. Pool, Rochester, at a meeting of the Urologic Section of the New York Academy of Medicine on February 18.

* * *

In behalf of the American Legion heart research professorship, Dr. B. C. Ford, Marshall, discussed rheumatic fever on a radio program broadcast over KMHL on February 12.

* * *

While Dr. B. W. Bunker of Anoka was in Florida with his family during part of February and March, his practice was maintained by Dr. Eugene Meyerding of Saint Paul.

* * *

On February 24 it was announced that Dr. Harvey J. Tompkins, formerly of the Veterans Hospital in St. Cloud, had been appointed chief of neuropsychiatry for the Veterans Administration.

* * *

Formerly of Minneapolis, Dr. Frederick M. Hass opened offices in Jordan about March 1 for the practice of medicine. After obtaining his medical degree, Dr. Hass served with the army occupation forces in Japan.

* * *

At a meeting of the American College of Allergists in New York City on March 14, Dr. B. T. Horton, Rochester, presented a paper written in collaboration with Dr. H. P. Wagener, entitled "Retrobulbar Neuritis; Treatment with Histamine."

* * *

Socialized medicine was discussed by Dr. E. M. Hammes, Saint Paul, in a talk on February 18 at a dinner meeting of the Saint Paul Business and Professional Women's Association.

* * *

Dr. John B. Erich, Rochester, at a sectional meeting of the American College of Surgeons in Denver, Colorado, during the first week of March, presented a paper entitled "Management of Traumatic Wounds about the Face."

* * *

Dr. William H. Bickel, Rochester, gave three lectures at the Lois Grunow Memorial Clinic in Phoenix, Arizona, about the middle of February. Subjects of his lectures were "The Differential Diagnosis of Foot Pain," "Backache," and "Treatment of Complications of Fractures."

* * *

"Anastomosis of Trachea with Polythene Tubes; An Experimental Study" was the title of a paper written by Dr. J. H. Grindlay and Dr. O. T. Clagett, Rochester, and presented by Dr. Grindlay at a meeting of the Central Surgical Association on February 19 in Chicago.

* * *

Chest clinics were conducted in Red Wing on February 24 and in Rochester on March 2 by Dr. Karl H. Pfuetze, superintendent of Mineral Springs Sanatorium, who examined ex-patients of the sanatorium and administered Mantoux tests to all persons desiring them.

* * *

Dr. Hilbert Mark, of the division of tuberculosis, Minnesota Department of Health, spoke on "Modern Aspects of Tuberculosis Control" at the forty-fourth annual midwinter council meeting of the Minnesota Federation of Women's Clubs, held in Minneapolis on February 20.

* * *

On the program at the meeting, to discuss the importance of immunization, were Dr. A. V. Stoesser, clinical professor of pediatrics at the University of Minnesota, and Dr. Clare Gates, director of health information of the Minneapolis Department of Health.

* * *

In Osakis it was announced on February 23 that Dr. E. E. Emerson had been named chairman of the local heart fund drive, part of the statewide campaign of the American Legion to establish a heart research professorship at the University of Minnesota.

* * *

At a meeting of the Colorado State Medical Society in Denver during the first week of March, Dr. G. J. Thompson, Rochester, presented two papers on urology.

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They were entitled "Common Office Procedures in Urology" and "Diagnosis and Treatment of Tumors of the Bladder."

* * *

At the February 19 meeting of the Saint Paul Surgical Society, Dr. R. F. Hedin spoke on "Adrenal Tumors," and Dr. Grant Hartnagel was elected to membership in the society. Both physicians are associated with the Interstate Clinic of Red Wing.

* * *

In Shakopee about February 15, Dr. B. F. Pearson and Dr. Roy T. Pearson moved into newly decorated and refinished first-floor offices in the Hickman Building at 116 South Holmes Street. The physicians were formerly located in offices in the Shakopee Theatre Building.

* * *

Near the end of February, Dr. Louis B. Kucera joined his uncle, Dr. S. T. Kucera, in practice in the latter's office in Lonsdale. The younger Dr. Kucera is a graduate of Marquette College, Milwaukee, Wisconsin.

* * *

On February 28, Dr. W. H. Peterson began practice in Owatonna as an assistant to Dr. L. V. Berghs. A graduate of the University of Minnesota Medical School, Dr. Peterson interned at Sacramento County Hospital in California, then served for two years in the navy, from which he was discharged in December, 1947.

Dr. Donald Dukelow, director of the Health and Medical Care Division of the Minneapolis Council of Social Agencies, is sponsored by the University of Minnesota in his health broadcasts each Sunday at 11:15 a.m. over KUOM.

* * *

In St. Peter early in March, Dr. Alfred Sherman ended his partnership with Dr. Carleton S. Strathern and indicated that he might locate in another southern Minnesota city. Dr. Strathern planned to form a partnership with another physician as soon as business and living arrangements could be made.

* * *

In Cannon Falls during the first week of March, Dr. John B. Maunder became associated with Dr. M. R. Williams in the practice of medicine. A graduate of the University of Minnesota Medical School, Dr. Maunder was associated with a clinic at Milaca for a few years before moving to Cannon Falls.

* * *

After practicing for a year at Holdingford, Dr. Glenn Schmitz became associated in practice with Dr. A. E. Amundsen in Little Falls on March 1. A graduate of the University of St. Louis Medical School, Dr. Schmitz served his internship at a hospital in Wheeling, West Virginia. After being discharged from the army early in 1947, he began practice with his brother, Dr. E. J. Schmitz, in Holdingford.

In an address in Chicago early in March, greater study of the heart was urged by Dr. Ancel Keys, director of the University of Minnesota's laboratory of physiological hygiene, when he predicted that heart diseases will claim 1,200,000 persons a year in this country by 1960.

* * *

Recently appointed to the Minnesota State Board of Health and Vital Statistics, Dr. Theodore H. Sweetser, Minneapolis, replaced Dr. Erling S. Platou of Minneapolis, a board member since 1933. Dr. Ruth E. Boynton, also of Minneapolis, was reappointed to the board. The appointments were for three years each.

* * *

Four papers were presented by Dr. Louis A. Brunsting, Rochester, at a meeting of the New Orleans Graduate Medical Assembly in New Orleans during the last week of February. The papers were entitled "The Treatment of Psoriasis," "Recent Advances in Dermatology and Syphilology," "Hidradenitis Suppurativa," and "Early Recognition of Cancer."

* * *

Two Rochester physicians were on the program of the Cascade Farm Bureau when it met in the Rochester city hall on February 13. Dr. W. V. Leary discussed the x-ray survey being conducted in Olmsted County at the time, and Dr. C. G. Sutherland thanked members of the bureau for their support in the March of Dimes campaign.

* * *

Plans for setting up immunization clinics for children of school and preschool age were discussed at a citywide meeting of Minneapolis Parent-Teachers Association health chairmen on February 19. It was planned that the clinics would provide the initial immunization series for preschool children and booster doses for children already in school.

* * *

Speaking at a meeting in Worthington on February 11, Dr. F. L. Schade, president of the Southwestern Minnesota Medical Society, described suggestive signs and symptoms of cancer and pointed out that more than 170,000 persons in the United States died from cancer in 1947. The title of Dr. Schade's address was "Cancer, Its Detection, Diagnosis and Control."

* * *

Following his discharge from the army in December, 1947, Dr. P. M. Geiser settled in Alexandria on February 9 to become associated with the Alexandria Clinic. Dr. Geiser received a B.S. degree in medicine from the University of North Dakota and his M.D. degree from the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C., in 1944. He served his internship and a residency at St. Mary's Hospital, Minneapolis.

* * *

In Deer River, Dr. A. L. Koskela and his brother, Dr. L. E. Koskela, assumed management and operation of the Deer River Community Hospital on March 1, as president and secretary, respectively. Dr. A. L. Koskela purchased the hospital building and clinic from Dr. G. A. Miners and Dr. H. R. Anderson in September, 1947.

* * *

After being affiliated with the Community Co-operative Health Center in Two Harbors since January 3, 1947, Dr. Ralph Papermaster presented the board of directors with his resignation on February 28, to be effective June 1. Dr. Papermaster announced that he will continue in private practice in Two Harbors, expecting to make his home permanently in the city.

* * *

Dr. J. J. Heisler has opened an office at 6224 Lyndale Avenue South, Richfield (Minneapolis suburb), where he is conducting a private practice in the afternoons. A staff physician at Minneapolis Veterans Hospital for the past year, he is continuing to devote forenoons to his work there. Dr. Heisler is a graduate of Temple University Medical College.

* * *

Dr. Stewart Thomson, associate professor of public health at the University of Minnesota, has taken the late Dr. W. A. O'Brien's place as radio commentator on health topics under the sponsorship of the Minnesota State Medical Association. Dr. Thomson's twice-a-week broadcasts, according to every indication, are receiving a very favorable reception from the laity.

* * *

Principal speaker at a meeting on March 9 of the Duluth Health Council, newly formed co-ordinating unit for twenty-four local agencies, was Dr. Donald A. Dukelow, director of the Health and Medical Care Division of the Minneapolis Council of Social Agencies. Dr. Dukelow was introduced to the group of public health workers from Duluth and neighboring communities by Dr. Mario Fischer, Duluth city health director.

* * *

The medical situation in Luverne was expected to be back to normal by March 1. For several weeks before that the entire medical burden had been carried by Dr. F. W. Bofenkamp and Dr. J. S. Burleigh. However, on February 22, Dr. O. W. Anderson returned from the

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South, and by the end of that week, Dr. C. L. Sherman was expected to arrive home from Rochester, where he had undergone an operation.

* * *

Stating that although there are still 100,000 new cases of rheumatic fever annually, Dr. Thomas Hall, of the University of Minnesota pediatrics department, who spoke at a pediatrics continuation course in early March, said that the nation's total "case load" of rheumatic fever victims is diminishing each year. He gave as one of the principal reasons for the decrease, the increasing awareness of parents and physicians alike of the conditions which can lead to the disease.

* * *

Albany acquired a new physician early in February when Dr. John J. Smyth began practice in the city as an associate of Dr. F. H. Baumgartner. Dr. Smyth, a graduate of the University of Iowa College of Medicine in 1944, served his internship at St. Mary's Hospital, Duluth, after which he became a resident physician at Nopeming Sanatorium. He then served in the navy for one and a half years and was discharged at the end of 1947.

* * *

In a talk before the Jean Templeman Nurses Legion post in Saint Paul on March 4, Dr. Harold S. Diehl, dean of medical sciences at the University of Minnesota, discussed the heart research professorship to be sponsored by the American Legion in Minnesota. Services of the most able scientists in the country will be sought with professorship funds provided by the legion, he stated. The $500,000 endowment campaign, now being conducted by the state department of the American Legion, will end on May 23.

* * *

The St. Louis County Advisory Committee on Tuberculosis met in Virginia on March 1 to plan future operations of the county's mobile x-ray unit. Completion of a citywide x-ray survey in Duluth, scheduled for April, would finish the coverage of St. Louis County by mobile unit, a task begun in September, 1943. Meeting with the committee to determine future continuance of the chest examination plan were Dr. R. W. Backus, director of the mobile unit, and Dr. G. A. Hedberg, medical director of Nopeming Sanatorium.

* * *

Dr. E. G. Oppen, Minneapolis, has announced the association of Dr. S. G. Egge in the practice of medicine, with offices at 427 La Salle Building in Minneapolis. Dr. Egge, who was graduated from the University of Minnesota Medical School in 1943, interned in Seattle, Washington, then served in the army medical corps for two and one-half years. During his period of military duty he served as a neuropsychiatrist at the Hospital Center, Camp Carson, Colorado, and as a medical officer with the 86th Infantry Division in the Southwest Pacific.

* * *

Two busy days were spent in Salt Lake City in March by Dr. H. W. Walters of Rochester. On March 8 he presented a paper entitled "The Liver and Biliary Tract in Relation to Surgical Lesions" at a meeting of the

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Salt Lake County Medical Society. On the morning of March 9 he spoke to medical students of the University of Utah on the subject, "Medical Education in Relation to Clinical and Experimental Studies of Disease." That evening, at a meeting of the Salt Lake Surgical Society, he presented a paper entitled "A Comparison of Vagotomy and Other Surgical Procedures in the Treatment of Peptic Ulcer."

* * *

Resignation of Dr. F. M. Feldman, Rochester, as city health officer was announced on February 21. Dr. Feldman resigned from the office, after serving for seven years, to accept a position with the United States Public Health Service as director of the central co-ordination and analysis office of the tuberculosis study section of the Division of Research Grants and Fellowships. In his resignation he stated that he had arranged to stay in Rochester until June 1, if necessary, in order that the changeover to his successor could be carried out with the least disruption of the city health program.

* * *

Social and health workers from four counties, meeting in Winona on February 19, heard Dr. David T. Carr, Rochester, urge that the old-fashioned social stigma against tuberculosis be transformed into a stigma against not treating it. Pointing out that tuberculosis is in the No. 1 spot in robbing the nation of useful man-years, Dr. Carr stated that public opinion should be against the person with tuberculosis who fails to submit to treatment. Dr. Carr's talk which was one of a series on the care and understanding of tuberculosis patients, was heard by social and health workers from Fillmore, Dodge, Olmsted and Winona counties.

* * *

Among physicians attending a five-day refresher course in pediatrics at the University of Minnesota during the first week of March were Dr. T. P. Groschupf, Bemidji; Dr. Henry Van Meier, Stillwater, and Dr. Charles M. Zeigler, Pine River.

Topics discussed at the course included infant feeding, immunizations, pathology of cerebral palsy, the approach to the handicapped child, heart problems in childhood and heart surgery, the Rh factor, and anemias of infancy and childhood. Conducted by University of Minnesota staff members, the course was supported by the Minnesota Society for Crippled Children and Adults.

* * *

Discovery of another supplementary method for the diagnosis of cancer was announced early in March by Dr. George E. Moore, Minneapolis, who described the technique in the March issue of *Science*.

The method developed by Dr. Moore, who has a fellowship in surgery at the University of Minnesota, is based upon the use of a Geiger counter and a radioactive dye which is injected intravenously in patients. The dye is retained by malignant tissue, and its presence is detected with the Geiger counter. Though not accurate in revealing most internal growths, the method works almost perfectly in cancer of the central nervous system, Dr. Moore stated.

* * *

Approximately 800 physicians and surgeons from seven midwestern states and three Canadian provinces attended a two-day sectional meeting of the American College of Surgeons in Minneapolis on March 15 and 16.

Among Minnesota physicians who appeared on the program were Dr. Owen H. Wangensteen, Dr. L. Haynes Fowler, Dr. E. T. Bell, Dr. James M. Hayes, Dr. Stanley R. Maxeiner, and Dr. N. Logan Leven, all of the University of Minnesota, while Mayo Foundation faculty members from Rochester who spoke included Dr. John M. Waugh, Dr. Gordon B. New, Dr. Mark B. Coventry, Dr. Winchell M. Craig, and Dr. Fred Z. Havens.

* * *

In an article in the *Journal of the American Medical Association* early in February, an effective treatment for brucellosis was announced by four Minnesota physicians.

Dr. Wesley W. Spink, professor of medicine at the University of Minnesota, and his colleagues, Dr. James M. Shaffer, Dr. A. I. Braude, and Dr. Wendell H. Hall, reported the results of treating thirty-five cases of brucellosis, many with either streptomycin or sulfadiazine and nine with a combination of the two drugs. Of the nine patients treated with the sulfadiazine-streptomycin combination, all but one seemed to recover, and that one slowly improved after more intensive therapy. The drug combination appeared to be far more effective than any other treatment yet tried.

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Red Lake Falls' position as the only county seat in Minnesota without a physician ended on March 15 when Dr. Lester N. Dale, formerly of Crosby, opened offices in the city.

* * *

After practicing at Foley for the past year, Dr. Ralph F. Mach has become associated in practice with Dr. Joseph E. Halpin at Rush City. A graduate of the University of Minnesota Medical School, Dr. Mach began his new duties on March 1.

* * *

General chairman of the 1948 fund drive by the Hennepin County chapter of the Minnesota Cancer Society is Russell D. Ekblad, Minneapolis branch manager of the Sun Life Assurance Company of Canada. The annual campaign for funds began on April 1. President of the Hennepin chapter, which is conducting the drive, is Dr. James A. Johnson, Minneapolis.

* * *

In International Falls on February 26 it was announced that Dr. C. C. Craig would be honored by City and County Employes Local 510. The union planned to dedicate the patient's room it was sponsoring at the Falls Memorial Hospital to Dr. Craig in recognition of his years of service to his community.

A native Minnesotan, Dr. Craig was a woodsman in the border country from 1895 until 1910. He then entered the University of Indiana School of Medicine, from which he received his medical degree in 1917. Immediately after graduation he returned to Koochiching County and International Falls, where he has continued to practice medicine for thirty-one years.

* * *

Forty-three Rochester physicians spend part of their spare time singing.

Under the direction of Dr. Bruce E. Douglass, they constitute the Mayo Foundation Fellows Chorus, a group of young physicians who like to get together after their work is done for the evening and sing. Organized in 1943 by Dr. Douglass and Dr. Donald C. Balfour, Jr., the chorus is primarily for the enjoyment and entertainment of its own members, but it has also given several programs in Rochester and has appeared in concert with other musical groups.

Chief soloist in the group is Dr. U. L. Seferovich of Belgrade, Yugoslavia, a widely known singer in his native land before he went to Rochester for further medical education. Assistant director of the medico-vocal organization is Mrs. Douglass, who also serves the chorus as accompanist and chief critic.

* * *

Ten orthopedic clinics for crippled children will be held in Minnesota before summer arrives.

The clinics, which began in St. Cloud on April 3, are made possible by state and Federal funds and are part of the health and welfare program of the Minnesota Division of Social Welfare, under the direction of Dr. F. F. Callahan, chief of the Medical Services Unit. Sponsored by Crippled Children Services, the clinics are open to those under twenty-one years of age, and services include medical examination, diagnosis and

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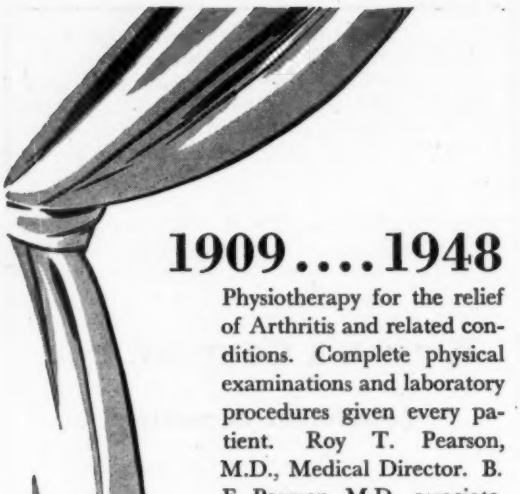
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recommendation for treatment. Approximately 800 children were examined at the clinics held last fall.

Schedule for the spring clinics is as follows: St. Cloud, April 3; Austin, April 9; Faribault, April 10; Thief River Falls, April 17; Brainerd, April 24; Worthington, May 1; Detroit Lakes, May 8; Grand Rapids, May 15; Moose Lake, May 22; Morris, June 5.

Among groups co-operating in conducting the clinics are the Minnesota Public Health Association, Minnesota State Medical Association and local county medical societies.

LYON-LINCOLN COUNTY SOCIETY POSTGRADUATE EXTENSION COURSE

The thirty-seventh semi-annual postgraduate extension course of the Lyon-Lincoln County Medical Society began on April 20 in Marshall, Minnesota. The course consists of seven weekly dinner meetings followed by scientific programs, and will continue until June 1.

The scientific programs for the meetings, which were arranged by Dr. W. H. Valentine, Tracy, chairman of the program committee, are as follows:

April 20.—"The Role of the Antihistaminic Drugs in the Treatment of Allergy," by Dr. William S. Eisenstadt, Minneapolis.

"Some Metabolic and Endocrinologic Disturbances Which Masquerade as More Common Medical Conditions," by Dr. Edmund B. Flink, University of Minnesota Medical School.

April 27.—"Recent Advancements in Pediatrics," by Dr. James F. Bosma, Minneapolis General Hospital.

May 4.—"A Consideration of the Certain Variations in the Anginal Syndrome," by Dr. R. D. Pruitt, Mayo Clinic, Rochester.

May 11.—"The Pathology and Treatment of Glomerulonephritis," by Dr. Moses Barron, University of Minnesota Medical School.

May 18.—"Diverticula of the Gastrointestinal Tract" and "Recent Developments in Abdominal Surgery," by Dr. James A. Johnson, University of Minnesota Medical School.

May 26.—"Dermatology in General Practice," by Dr. Henry E. Mickelson, University of Minnesota Medical School.

June 1.—"A Fracture Conference on the Upper Extremities. Movies on Colles Fractures, and Discussion," by Dr. Earl L. Henrikson, University of Minnesota Medical School, and Dr. M. C. Nelson and Dr. Dan Moos, Minneapolis General Hospital.

BLUE SHIELD NEWS

Number of persons covered by Blue Shield as of March 15, 1948	12,687
Number of Blue Shield cases paid on March 15, 1948	56
Total for 1948	82
Amount paid on Blue Shield cases on March 15, 1948	$2,215.88
Total for 1948	$3,307.38

In attending various county medical society meetings, we have been asked many questions that we feel should be answered and cleared up. It is only logical to assume that if these questions arise one place they will come up in another. As it would be practically impossible to contact each physician in the state and answer his questions individually, we are going to take advantage of the generosity of MINNESOTA MEDICINE in allowing Blue Shield space, and use it to answer the more important questions.

We have had many questions asking how the physician is to ascertain the patient's income, that is, whether it is more or less than $1,500 for the single person or more or less than $2,500 for the husband and wife or family. Those of us who have been asked this have given the answer, "What do you do now?" That, of course, requires a little more explanation.

First of all, we would like to explain the income limits. When Blue Shield was first considered, many such plans throughout the country were studied, that is, those with service contracts, those with indemnity contracts and those with service and indemnity contracts. It was finally decided by the House of Delegates that the Minnesota Medical Service, Inc., should offer a service and indemnity type of contract. The income figures under which service benefits would be allowed were arrived at by studying the figures and actuarial experience of other plans and also by the consensus as to what the limit should be in Minnesota. The limits were then set at $1,500 for the single person and $2,500 for the family. The $2,500 for the family includes the

salaries of all employed persons in the family who contribute to the support of the family. It also includes real and other assets that a person may have, such as a farmer who has a large farm and derives most of his food, such as meat and vegetables, from it.

It may be interesting to note that in the various Blue Shield plans the income limits vary from $1,500 for a single subscriber to $5,000 for a family. The limits common to most plans are $2,000 for a single subscriber and $3,000 for a family. In Minnesota, about 20 per cent of the population is eligible to receive service benefits.

Now to get back to the question. The person's income status could be determined either by the corporation or by the attending physician. If the corporation were to determine the subscriber's income status, it was felt that it would be incorrect in many instances. For example, if at the time an applicant enrolled in Blue Shield he were asked to indicate whether he was a Limited subscriber or an Unlimited subscriber, he might truthfully state Unlimited but a year later, after changing jobs, he might become a Limited subscriber. Thus, if such a subscriber were treated by a participating doctor of medicine, the corporation would treat this subscriber as Unlimited which would be very unfair to the physician. Secondly, if the corporation were to determine the subscriber's status, such determining would tend to interfere with the patient-physician relations, which the contract definitely states it will not do. As a result, it was felt that since the physician is in direct contact with the patient, knows the patient's home life, his occupation and his status in the community, he (the doctor) was the most logical person and in the better position to determine the patient's income. Further, the physician is accustomed to doing this very thing in his present relationship with his patients.

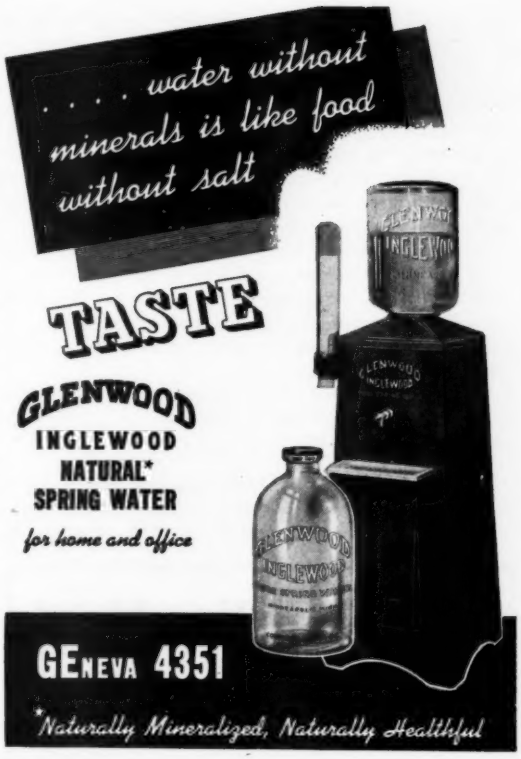
In completing the form, consider the patient as you do now, and if you feel that his income and assets would place him in the Limited class, place him there. If the patient is one whom you would ordinarily charge a low fee, show him as Unlimited. In other plans throughout the country, this procedure has been carried out, and a very small percentage of the subscribers raise any question about being listed either as a Limited or as an Unlimited subscriber. In the event such a question should arise, contact the Blue Shield office and every effort will be made to help you.

HOSPITAL NEWS

In Le Sueur, at a meeting of the board of directors of the Commercial Club on February 9, a five-man committee was named to formulate a plan of action in regard to the hospital construction program proposed in Minnesota. Under the plan worked out by the Minnesota Department of Health, Le Sueur is in eighth place in the state for Federal funds to aid in building a suggested thirty-three-bed hospital. Named as chairman of the committee was Dr. S. Ericson.

* * *

Under a new plan developed through the co-operation of the Bemidji Medical Society, the Health Service of the Bemidji State Teachers College now provides com-



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plete hospitalization, medical and surgical services for up to seven days to students suffering injuries or acute illnesses during the school year. The new plan was announced on February 20.

* * *

A maternity home was opened in Blooming Prairie on February 13. Operated by Mrs. Mark Vanderbrook, the home has been equipped to meet the approval of local physicians and is being run under standard hospital rules.

* * *

At the annual election of officers of the Virginia Municipal Hospital on March 9, Dr. David A. Sher was elected president of the hospital to succeed Dr. C. B. Cunningham. Dr. Sher is associated with the Lenont-Peterson Clinic in Virginia.

Elected as vice president of the hospital was Dr. John S. Siegel, Virginia, while Dr. John Kochevar, Eveleth, was named secretary.

* * *

In Princeton, Dr. W. R. Blomberg was elected president of the Community Hospital medical staff at a meeting on March 11. He succeeds Dr. A. T. Kapsner in the position. Other officers elected at the meeting of the staff were Dr. Elton F. Clothier, Elk River, who was named vice president, and Dr. William F. McManus, who became secretary-treasurer, succeeding Dr. James T. Crabtree.

* * *

New head of the St. Cloud Veterans Administration Hospital is Dr. Claud Lewis, former manager of the Fort Meade (S. Dak.) Hospital, who began his new duties in St. Cloud on March 20. He succeeds Dr. John Pringle, former head of the hospital, who has retired.

A graduate of Washington University Medical School, St. Louis, Missouri, in 1924, Dr. Lewis began his career with the Veterans Administration in 1931 as a physician at Downey, Illinois. In 1935 he was transferred to the Waco, Texas, VA hospital, and in 1944 he was commissioned by the army medical corps, serving as a lieutenant colonel with the VA. While still an army officer, Dr. Lewis became manager of the Fort Meade Hospital in 1946.

* * *

A delegation of five Clearbrook businessmen spent March 11 inspecting the Littlefork Hospital and conferring with Dr. Ralph D. Hanover, Littlefork. Purpose of the delegation was to gather information and ideas to aid in the planning of a hospital which the Clearbrook community expects to build during the summer.

* * *

Plans for the Caledonia Community Hospital began taking shape on March 16 when a committee met and elected temporary officers of the newly formed hospital association.

Official name of the group will be the Caledonia Community Hospital Association, Inc. Tentative plans of the organization call for purchase of the existing but inadequate hospital building and development of a program of alterations and repairs to increase both capacity and efficiency of the hospital.

Named as members of the temporary board of trustees, serving only until the first organizational meeting of the association members, were Dr. Jacob J. Ahlfs and Dr. Neil T. Norris, both of Caledonia.

* * *

A mass meeting was held in Waverly on March 23 to point out benefits of a proposed new hospital for the area. Among speakers at the meeting, which was held to enlist support of residents of Waverly and the surrounding area, was Dr. C. L. Roholt of Waverly.

The proposed hospital, which will be partly financed by Federal funds, will be a thirty-two bed hospital and will cost $200,000. A fund-raising drive, conducted by a group headed by businessmen of Howard Lake, had gathered $44,500 in pledges by the middle of March, aiming at a $50,000 goal by May 1 and an eventual goal of $70,000.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

PATHOLOGY OF TUMORS. R. A. Willis, D.Sc., M.D., F.R.C.P. Sir William H. Collins, Professor of Human and Comparative Pathology, Royal College of Surgeons, London. Formerly Pathologist to Alfred Hospital; Consultant Pathologist to the Austin Hospital for Chronic Diseases, and Lecturer on the Pathology of Tumours in the University of Melbourne, Australia. 1521 pages. Illus. Price $20.00, cloth. Butterworth & Co., Ltd., London, England, and C. V. Mosby Co., St. Louis, 1948.

PSYCHOBIOLOGY AND PSYCHIATRY. A Textbook of Normal and Abnormal Human Behavior. Second Edition. Wendell Muncie, M.D. Practicing Psychiatrist; Chairman Medical Advisory Board, Seton Institute, Baltimore, Md.; Associate Professor of Psychiatry, Johns Hopkins University; Consultant in Psychiatry, U.S.V.A. 620 pages. Illus. Price $9.00, cloth. St. Louis: C. V. Mosby Co., 1948.

HEART. A Physiological and Clinical Study of Cardio-Vascular Diseases. Aldo A. Luisada, M.D. Instructor in Physiology and Pharmacology, Tufts College Medical School Lecturer in Medicine; Lecturer, Postgraduate Division, Tufts College Medical School; Associate in Medicine, Beth Israel Hospital, Boston, Mass.; former Professor of Medicine, Ferrara, Italy. 653 pages. Illus. Price, $10.00, cloth. Baltimore: Williams & Wilkins Co., 1948.

PHYSIOLOGY OF EXERCISE. Laurence E. Morehouse, Ph.D., Associate Professor of Physical Education, University of Southern California, formerly Research Fellow, Harvard Fatigue Laboratory; and Augustus T. Miller, Jr., Ph.D., Associate Professor of Physiology, University of North Carolina Medical School. 353 pages. Illus. Price $4.75, cloth. St. Louis: C. V. Mosby Co., 1948.

THE BATTLE OF THE CONSCIENCE. A Psychiatric Study of the Inner Workings of the Conscience. Edmund Bergler, M.D. 296 pages. Price $3.75, cloth. Washington, D. C.: Washington Institute of Medicine, 1948.

ENCYCLOPEDIA OF MEDICAL SOURCES. Emerson Crosby, Kelly, M.D., F.A.C.S., Associate Professor of Surgery, Albany Medical College; Attending Surgeon, Albany Hospital; Editor, Medical Classics. 476 pages. Price, $7.50, cloth. Baltimore: Williams & Wilkins Company, 1948.

OPERATIVE GYNECOLOGY. H. S. Crossen, M.D., and R. J. Crossen, M.D. 6th edition. 1,000 pages. Illus. Price, $15.00. St. Louis: C. V. Mosby Co., 1948.

The sixth edition of Crossen and Crossen's Operative Gynecology, published in 1948, is not a larger volume than the fifth edition of 1938, but it contains a greater number of illustrations and more of these are in color. In order to hold the book to reasonable size and still incorporate new material, the authors have eliminated much that was interesting from the historical standpoint.

The discussion on prevention and cure of carcinoma of the pelvic organs has been enlarged. Preoperative and postoperative radiation are discussed and advocated.

Various methods for the correction of retro-displacement of the uterus are again described, but, in the discussion, the authors make the statement that most of the symptoms ascribed to retro-displacement are due to complicating conditions. This is in line with the modern trend of thought of most gynecologists.

Irradiation treatment, after curettage for myoma of the uterus, is discussed at greater length than previously. The authors have used this method in a selected series of patients. The pro's and con's of such therapy are discussed.

Throughout the book, most of the discussions include references to more detailed papers on the various subjects, so that the reader may investigate the subject further.

This is an excellent summary for those interested in operative gynecology.

SELMA C. MUELLER, M.D.

UNIPOLAR LEAD ELECTROCARDIOGRAPHY. Emanuel Goldberger, B.S., M.D. 182 pages. Illus. Price $4.00. Philadelphia: Lea & Febiger, 1947.

This is an excellent monograph and a convincing plea for more extensive study of the heart's electrical potentials by the clinical cardiologist.

Wilson, in 1942, before the Association of Life Insurance Medical Directors of America, sounded the keynote for unipolar leads. Since then several fairly extensive studies along the same line of approach have appeared. Some of us who have employed the limb leads for twenty-five years and adopted the exploratory electrode on the chest with the indifferent pole at a distance have felt fairly secure in our interpretations.

The finer methods suggested in Goldberger's book will have to be adopted in some instances by us in spite of the extra labor, time, and expense involved.

The monograph is highly recommended to the clinical cardiologist.

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